ARISTOTLE'S CRITICISM OF PLATO AND THE ACADEMY

LONDON HUMPHREY MILFORD
OXFORD UNIVERSITY PRESS

ARISTOTLE'S CRITICISM OF PLATO AND THE ACADEMY

VOLUME I

BY

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The Johns Hopkins University

BALTIMORE

THE JOHNS HOPKINS PRESS

1944

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SECOND PRINTING, 1946

Printed and Lithoprinted in U S A
University Lithoprinters, Ypsilanti, Michigan, 1946

To My Teachers of Greek in Berkeley

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FOREWORD

In the two volumes which will constitute this work I propose to give a complete account and analysis of all that Aristotle says about Plato and about Plato's pupils and associates in the Academy.

Upon the various aspects of this subject much has been written, much more than can be here passed in review, for in one way or another it has been a matter of concern to all interpreters of Academic philosophy. There remain, as will be shown in the course of the present work, a few clear indications of what some of Aristotle's contemporaries in the Academy thought and said about certain of his statements concerning Plato's doctrines. Among the later Greek commentators, a strict Peripatetic like Alexander of Aphrodisias could accept Aristotle's criticism of the Academy at its face value and try to enforce it, although even Alexander's teacher, Aristocles, appears to have maintained that the Aristotelian and Platonic philosophies were essentially in agreement. Those commentators who were Neo-Platonists, however, either charged Aristotle with lack of understanding and worse, as Syrianus did (cf. Zeller, *Phil. Griech.*, III, 2, p 821), or, seeking like the earlier eclectics to reconcile him with Platonism as they understood and espoused it, insisted that he had never intended to criticize Plato's real meaning, which of course he had understood, but only to refute by anticipation the superficial meaning which careless readers might mistakenly take from Plato's words (e. g. Simplicius, *De Caelo*, p. 640, 27-32, Asclepius, *Metaph.*, p. 166, 35-36; cf. Zeller, *Phil. Griech.*, III, 2, pp. 741-2, 911-12).

In modern times scholars have been concerned with Aristotle's remarks about Plato chiefly as evidence of what the latter said and meant; and yet no agreement has been reached concerning the weight and value to be assigned to this evidence. The philosopher Hegel in his *Vorlesungen über die Geschichte der Philosophie* attacked " der gelehrt seyn wollende Scharfsinn " which declares that Aristotle did not rightly understand Plato.[1]

[1] G. W. F. Hegel, *Sämtliche Werke* (Jubilaumsausgabe in zwanzig Bänden von

An example of the opinion attacked by Hegel is Friedrich Ast's statement that the peculiar genius of Plato's manner of thinking and writing obviously had remained an alien thing to Aristotle (*Platon's Leben und Schriften,* p. 390, note). In 1826 F. A. Trendelenburg published a monograph entitled *Platonis De Ideis Et Numeris Doctrina Ex Aristotele Illustrata.* This was designed to repair what Trendelenburg called the neglect with which historians of ancient philosophy had hitherto treated Aristotle's scattered statements concerning Plato's doctrine (p. 5); and it may have been the influence of Hegel's lectures which caused him to introduce his subject (p. 3) with the statement: "Aristotelem vero Platonis philosophiam recte intellegere et candide tradere aut nescivisse aut noluisse, nemo jure contendet." Nevertheless, both of these charges were later brought against Aristotle by Teichmüller who rejected his testimony wholesale (*Studien zur Geschichte der Begriffe,* p. 322; *Literarische Fehden* [1881], pp. 228-32); and Natorp, whose interpretation of the theory of ideas though different from Teichmüller's is also in conflict with Aristotle's, devoted two chapters of his book, *Platos Ideenlehre* (pp. 384-456 of the second edition, 1921) to the demonstration that Aristotle utterly failed to understand the meaning of Plato's doctrine. Constantin Ritter, approving the judgment of Teichmuller and Natorp, declared the unreliability of Aristotle's testimony concerning Plato to be an established fact (*Neue Untersuchungen über Platon,* pp. 37-8; *Platon,* I, p. 584); and Otto Kluge in his dissertation, *Darstellung und Beurteilung der Einwendungen des Aristoteles gegen die Platonischen Ideenlehre,* though rejecting Natorp's interpretation of the ideas (pp. 24-6), came to conclusions concerning Aristotle's misunderstanding of Plato (pp. 65-74) which are substantially—and in large part even verbally—identical with those of Natorp.[2]

Hermann Glockner), XVII, p. 205 and XVIII, p 300. These passages and the possibility of Hegel's influence upon Trendelenburg were brought to my attention by my colleague, Dr Ludwig Edelstein

[2] Kluge's dissertation is more systematic but no less meager than Natorp's treatment of the subject and does not begin to do justice to the available material either from the point of view of Aristotle or from that of Plato. Of Edgar Freund's dissertation, *Aristoteles Stellung zur Platonischen Ideenlehre,* I have

Hegel's conception of the development of philosophy caused him to consider Aristotle in fact the successor of Plato (*op. cit.*, XVIII, pp. 298, 301). In similar fashion more than a century later Werner Jaeger, in whose eyes Plato's philosophy was the "matter" out of which the newer and higher form of Aristotle's thought proceeded by a gradual but steady and undeviating development (*Aristoteles*, p. 11), pronounced the "old controversy," whether or not Aristotle understood Plato, to be "absolut verständnislos" (*op. cit.*, p. 159). Yet this did not prevent Leisegang from reasserting that Aristotle's own pattern of thinking was incompatible with a proper understanding of Plato (*Denkformen*, pp 216 ff., cited in Leisegang's *Die Platondeutung der Gegenwart*, p. 8, n. 2); and to Jaeger's pronouncement De Vogel has replied that, on the contrary, the question is philosophically necessary (*Een Keerpunt in Plato's Denken*, p. 231). So much at least need not be debated merely on the ground of psychological probabilities, modern theories of the history of philosophy, or our own understanding of Plato's writings, for, if another of Plato's students be found in disagreement with Aristotle's interpretations, it is obvious that both cannot be in the right, though it is possible that both may have been mistaken. Certainly Speusippus and Xenocrates would have been unimpressed by the much repeated modern argument that Aristotle's long association with Plato guarantees his correct understanding of the latter's philosophy.

Even if it be true, however, that "Aristotle is the last authority to look to for a fair and liberal account of Platonism" (Marie V. Williams, *Six Essays on the Platonic Theory of Knowledge*, p 132), must not his reports, as distinguished from his interpretations, be considered unimpeachable testimony? Such is the plausible distinction adopted by A. E. Taylor (*Plato*[3], p. 503) and by John Burnet before him (*Greek Philosophy*, I, pp. 312-13) who say that we are bound to believe Aristotle when he tells us that Plato *said* a particular thing but not when

been able to obtain only a "Teildruck" published in 1936 which contains the first two of five announced chapters, so far as can be judged from such a sample, this dissertation appears to be no improvement over that of Kluge, of which it falls short, moreover, in excluding from consideration the so-called Platonic "number-theory."

he tells us what Plato *meant* or what the historical origin of a doctrine was. The plausibility of this neat distinction is considerably diminished, however, by common experience which teaches that in spite of the best intentions a witness' testimony as to fact is deeply affected by his own unconscious interpretation of the fact. The applicability of the distinction is especially impaired in the case of Aristotle who so intertwined report, interpretation, and criticism that even von Stein, who defended his account of Plato, asserted that his reports and his criticisms are prejudiced by each other (*Sieben Bücher zur Geschichte des Platonismus*, II, p. 77, n. 1). Moreover, other scholars have maintained that Aristotle not infrequently puts into the mouth of a philosopher what he considers the necessary implication of that philosopher's doctrine as he interprets it and that he gives mistaken *reports*, not merely *interpretations*, of Platonic dialogues which are at our disposal. With such considerations in mind Tannery declared: " Aristote a été assez souvent pris à torturer et à rendre méconnaissables des passages empruntés aux *Dialogues* pour que ses indications les plus précises ne soient point reçues sans contrôle (*L'Education Platonicienne* = *Mémoires Scientifiques*, VII, p. 89).

What has particularly exercised modern scholars is the fact that Aristotle ascribes to Plato a form of the theory of ideas which does not appear in Plato's dialogues. This discrepancy was for some time explained by assuming that Aristotle's reports and criticisms refer to an " esoteric " doctrine which Plato reserved for his intimate associates and purposely excluded from his published writings (e. g. Tennemann, *System der Platonischen Philosophie*, I, p. 114 and *Geschichte der Philosophie*, II, pp. 205-22) To help lay the ghost of this " esoteric Platonism," which, attacked both by Schleiermacher (*Plato's Werke*, I, 1, pp. 11 ff.) and by Hegel (*op. cit.*, XVIII, pp. 179-80), has several times been revived and each time diligently disposed of, Zeller in 1839 published *Die Darstellung der Platonischen Philosophie bei Aristoteles* as the third essay in his *Platonische Studien* (cf. pp. 199-200 and 300). Here, as later in his *History* (*Phil. Griech.*, II, 1, pp. 679-86, 750-60, 946-51), he concluded that Aristotle's account of a theory of idea-numbers which are derived from two ultimate principles comes not from the

Platonic dialogues, where there are at most the "germs" or "premises" of such a doctrine, but from Plato's lectures, in which the earlier theory of the dialogues was transformed; but at the same time he argued that Aristotle misunderstood and misrepresented this later doctrine, although the reason for this in some cases was the lack of clarity in Plato's exposition.

That Plato ever taught any such theory of idea-numbers has been denied altogether by some few scholars like Teichmüller (*Literarische Fehden*, p. 229, note) and Shorey (*De Platonis Idearum Doctrina*, pp. 31-9); but in general it has been assumed since the appearance of Trendelenburg's monograph that the doctrine reported and criticized by Aristotle must in some sense have been the teaching of Plato. Just what that teaching meant, however, and the apparent discrepancy between it and the dialogues have been explained in widely different ways. Trendelenburg himself thought Aristotle's testimony in accord with the general tenor of the dialogues and found in the latter certain similarities though nothing exactly corresponding to the details of that testimony; but he denied that the doctrine reported really involved the substitution of numbers for ideas (*op. cit.*, pp. 94-6, 91-2). Von Stein (*op. cit.*, II, pp. 95, 108-15, 139), going much further, maintained that Aristotle refers to nothing which is not at least alluded to in the dialogues but simply reports the doctrine of the *Parmenides*, *Sophist*, and *Philebus* interpreted in the light of Plato's oral explanations. In the *Journal of Philology* from 1882 to 1888 Henry Jackson published a series of articles on the *Philebus*, *Parmenides*, *Timaeus*, *Theaetetus*, *Sophist*, and *Politicus* purporting to show that in these dialogues Plato had set forth a new theory of ideas which is in accord with the Aristotelian evidence, while Tocco in the preceding decade (*Ricerche Platoniche*, 1876) and Siebeck in the decade following (*Zeitschrift für Philosophie u. philos. Kritik*, CVII and CVIII) argued that the *Parmenides*, *Sophist*, and *Philebus* were meant to be polemics against Aristotle. Of all Plato's writings it is the *Philebus* especially in which the theory of idea-numbers has been sought. So, Natorp saw the whole doctrine as an extension of the principles enunciated in that dialogue (*op. cit.*, pp. 433-41); Raeder declared Aristotle's description to be in agreement with the *Philebus*

(*Platons Philosophische Entwickelung*, pp. 372-3); Milhaud characterized the doctrine of the *Philebus* as intermediate between that of the *Sophist* and that of Plato's oral teaching reported by Aristotle (*Les Philosophes-Géomètres de la Grèce*[2], pp. 354-8); and even Burnet (*Greek Philosophy*, I, pp. 324, 332) and A. E. Taylor (*Plato*[5], p. 417) asserted that the *Philebus*, while not containing the full doctrine, comes nearer than anything else in Plato's writings to Aristotle's account of what that doctrine was.

D. G. Ritchie (*Plato* [1902], chap. V), who also supposed that after the *Parmenides* Plato revised his doctrine and that the later form of the theory is to be sought in the *Philebus* which is a key to the *Timaeus*, contended against Jackson that this revision was an extension rather than a restriction of the ideas and an attempt to overcome their separation from phenomena. Ritchie held that the identification of ideas with numbers criticized by Aristotle was not Plato's doctrine but that of some disciples like Speusippus and that, since the doctrine of ideas itself is criticized rather in its earlier than in its later form, Aristotle directs this criticism not against Plato but against reactionary pupils like the " friends of the ideas " whom Plato himself had criticized. In *Aristotle's Criticisms of Plato*, an essay published in 1909, J. M. Watson replied that Aristotle is unaware of any such divergence as Ritchie postulated between Plato and the disciples who retained the ideas, that the idea-numbers belong to Plato's later development, and that it is the later theory that Aristotle criticizes. Watson also believed that Plato's theory was modified after the *Parmenides* and that " the *Philebus* favors Aristotle's statement that the elements of the ideas are in some sense or other the elements of all reality "; but he rejected Jackson's interpretation of this later theory and admitted that the doctrine of idea-numbers could not be extracted from the dialogues alone. Nevertheless, he sought to refute the charges of Zeller and Milhaud as to Aristotle's misconception of Plato's meaning. On the other hand, Adolfo Levi, though he thought that the *Philebus* " opens the way to the conception of idea-numbers " and that this doctrine was taught by Plato in his lectures but is not expounded in the dialogues, insisted that both the *Philebus* and the *Timaeus* as well as the

whole spirit of the Platonic philosophy prove Aristotle to have been mistaken in saying that according to this doctrine the elements of the ideas are the elements of all things (*Il Concetto del Tempo . . . nella Filosofia di Platone* [1920], pp. 86-8; *Sulle Interpretazioni Immanentistiche della Filosofia di Platone* [1920], pp. 180-82). Moreover, Levi expressly rested his connection of the *Philebus* with the doctrine of idea-numbers upon a particular interpretation of that dialogue, and so he would presumably have admitted that if that interpretation is wrong, as many other interpreters have maintained, there is nothing in the dialogues which "opens the way" to the conception of idea-numbers.[3]

Yet what if there is no indication of such a doctrine in the dialogues? Zeller had said that Aristotle owed his knowledge of Plato's philosophy primarily to oral communication and that the Platonic metaphysics which he discusses is preponderantly that of Plato's lectures (*Phil. Griech.*, II, 1, pp. 467-8). Susemihl, finding no trace of idea-numbers in the dialogues, assumed that Aristotle had been initiated into the Platonic philosophy by Plato's lectures at a time when the theory of ideas had already been altered in the direction of the idea-numbers and so reading Plato's writings in the light of these lectures did not understand how to distinguish his system as it appears in the former from that alteration which it had undergone in the latter (*Die Genetische Entwickelung der Platonischen Philosophie*, II, 2, pp. 507-8). A more uncompromising form of Zeller's opinion appeared much later in Jaeger's pronouncement that as a source for Plato's theory of ideas the

[3] "La transizione (*scil.* to the conception of ideas as numbers) è determinata solo quando il *Filebo* vede anche nelle realtà ideali un prodotto del πέρας e dell' ἄπειρον (*Il Concetto del Tempo . . nella Filosofia di Platone*, p. 86) That is, Levi puts the ideas into the class of the μικτόν (*op. cit.*, pp 78-9 and 80, n. 1, *Sulle Interpretazioni Immanentistiche*, pp 160 and 162). Zeller contended that they belong in the class of αἰτία (*Phil. Griech.*, II, 1, pp. 691-8); Grube, among many others, classed them under πέρας (*Plato's Thought*, pp. 301-4); Ritter put them in all four classes (*Platon*, II, p. 183; cf. also M. Gentile, *La dottrina platonica delle idee numeri*, p. 39); and Shorey protested against making any of the four classes correspond exactly to the terms of Plato's metaphysics, although the only one which he recognized as analogous to the ideas is the πέρας (*The Unity of Plato's Thought*, pp 64-5).

dialogues are only a *pis aller* and that Aristotle's sources wherever he speaks of Plato were Plato's lectures and discussions in the Academy (*Studien zur Entstehungsgeschichte der Metaphysik des Aristoteles*, pp. 140-1). Jaeger's pronouncement has been cited with approbation by Leisegang (*Die Platondeutung der Gegenwart*, p. 10, n. 2) and by Praechter (Ueberweg, *Grundriss der Geschichte der Philosophie*, I[12], p. 264, n. 1) who adds that precedence should be given the oral instruction which Aristotle represents because such instruction is less exposed to misunderstanding than are Plato's doctrines as transmitted in writing (*op. cit.*, p. 264). Wilamowitz, on the contrary, even though he too believed that Plato presented in his lectures a "new ontology," warned that such reports as those of Aristotle must always be received with great caution and that what a thinker has not himself given out as completed must never be treated on an equal plane with his finished works, much less filled in with students' impressions of his last oral suggestions (*Platon*, I, p. 705). One might have thought such a solemn warning unnecessary for scholars who were themselves lecturers and teachers! De Vogel, who also admitted a later doctrine of idea-numbers and believed that the *Parmenides* marks a critical turn in Plato's thought, insisted, in apparently unconscious contradiction to Susemihl, that Aristotle's conception and criticism of the later Platonic theory were determined by the "classical" dialogues which preceded the crisis of the *Parmenides* (*op. cit.*, pp. 234-5, cf. pp. 248-9) Ritter went further and declared that, since Plato continued to write until his death and the notion of a later, purely oral doctrine is consequently sheer hallucination, it is practically out of the question that Aristotle should be able to report from Plato's teaching anything of importance which is not to be found in the dialogues (*Die Kerngedanken der Platonischen Philosophie*, p. 10).

Burnet and Taylor, on the contrary, not only accepted the Aristotelian testimony concerning Plato's doctrine but emphasized the discrepancy between it and the Platonic writings. Aristotle, they maintained, constantly attributes to Plato the doctrine of idea-numbers and knows of only one Platonic philosophy, that which identifies the ideas with numbers; this appears nowhere in the dialogues because in them Plato never

meant to expound his own philosophy but only to give a truly historical presentation of Socrates, to interest the educated public in philosophy, and in the later writings to define his own attitude toward other philosophical schools (Burnet, *Plato's Phaedo*, pp. xliii-xlvi; *Greek Philosophy*, I, pp. 178, 214, 313 and Taylor, *Plato*, pp. 10, 503, 504; *A Commentary on Plato's Timaeus*, pp. 11, 136). Erich Frank in his book *Plato und die sogenannten Pythagoreer* (pp 93-4) also asserted that Aristotle everywhere takes for granted Plato's identification of ideas with numbers and that Aristotle must have known what Plato's doctrine really was; this technical doctrine, however, could, according to Frank, naturally only be hinted at in the popular dialogues intended for a wider circle than the school, although Frank also says that no one who studies these dialogues without prejudice can doubt that Plato conceived the phenomenal world as purely quantitative and its ideas as numbers. This notion that the ideas could not be anything but numbers for Plato because he considered all qualities merely subjective sensible appearance (Frank, *op. cit.*, p. 95) is in direct contradiction not only to Natorp's explanation that the theory of idea-numbers was meant to be a mathematics of qualities (*Platos Ideenlehre*[2], pp. 438-41) but also to Milhaud's assertions that in reading Plato it is impossible not to feel what great importance he assigns to ideas of qualitative perfection and that the idea-numbers were meant to be intimate unions of quantity and quality in which quality has the ideally perfect state of precision and stability (*Les Philosophes-Géomètres de la Grèce*[2], pp. 348-9, 352, 358, 363-4); and Frank himself confessed (*op. cit.*, pp 114-15) that he was unable to reconcile his conception of the idea-numbers with the ideas of the Platonic ethics and dialectic and that even from Aristotle's treatment Plato would appear to have regarded the idea-numbers in themselves not as quantitative but as qualitative units. Frank's confession was cited by Julius Stenzel in the foreword to the first edition of his book, *Zahl und Gestalt bei Platon und Aristoteles* (p. IV of the "Zweite Erweiterte Auflage"[4]) as justification for his

[4] All references are to this edition of 1933 in which the author not only altered his original text in many places but also added several new chapters dealing with criticisms of the first edition and incorporating new material from

own attempt to elicit from Aristotle's criticism an understanding of the Platonic number-theory. Stenzel, however, insisted that there must be references in the dialogues to the Platonic theory criticized by Aristotle (*op. cit.*, pp. 1 and 68); he declared the *Philebus* to be the dialogue in which the contents of Plato's oral doctrine were meant to be made accessible to a wider public (*op. cit.*, pp. 111 and 68-70), and he tried to find the meaning of the theory of idea-numbers in the method of diaeresis which he believed to be a peculiar characteristic of the later dialogues.

In 1930 Marino Gentile published *La dottrina platonica delle idee numeri e Aristotele*, the announced purpose of which was to combine the conception of Aristotle's development advanced by Jaeger with Stenzel's interpretation of the idea-numbers, in this way to correct and supplement the work of each of these scholars by means of the other's results, and so to describe how Aristotle's own philosophy took its departure from the later Platonism which he criticizes (pp. 9 and 12). So far as this later Platonism is concerned Gentile held that Aristotle entered the Academy when Plato's self-criticism as recorded in the *Parmenides* had already begun, that according to Aristotle's reasoning Plato tried to overcome the difficulties of his original theory of ideas by substituting that of idea-numbers but thereby only increased its deficiencies (*op. cit.*, pp. 41-2), and that not only the *Philebus* (pp. 40-1) but also and more especially the *Timaeus* (pp. 67-8) justifies Aristotle in ascribing to Plato the identification of ideas and numbers, the intermediate nature of mathematicals, the causality of the idea-numbers, and their derivation from two principles, the one and the indefinite dyad. Yet five years later L. Stefanini in his work on Plato (*Platone*, II [1935], pp. 378-411) asserted that Aristotle does not testify to any generation of idea-numbers in Plato's theory (pp. 402-3, cf. p. 399, n. 9) although he does not always clearly distinguish the two (p. 411), that the theory of ideal numbers was no innovation of "the unwritten doctrines" but was only one

his own studies, especially from his article "Zur Theorie des Logos bei Aristoteles" in *Quellen und Studien zur Geschichte der Mathematik*, Abt. B, I, 1 (1929), pp. 34-66.

aspect or exemplification of the theory of ideas with which it was contemporaneous (p. 406), that Plato never made all ideas numbers, and that the theory of the one and the indefinite dyad was only an episode in his thought related to the *Philebus* but given up by the time of the *Timaeus* (pp. 408-9)

The most considerable study which has hitherto been made of the theory of ideas as Aristotle reports and criticizes it is Leon Robin's book, *La Théorie Platonicienne des Idées et des Nombres d'après Aristote,* published in 1908. Alone of all the scholars who have treated the subject Robin made a serious effort to collect all the Aristotelian passages which are concerned with the Academic theories of ideas and numbers, to interpret these passages with the aid of ancient commentators, to analyze Aristotle's criticism, and finally to reconstruct on this basis the form and meaning of the doctrine of ideas. He purposely refrained, however, from making any reference to any of Plato's writings, so that not only do his own conclusions and reconstructions disregard all that might be learned from Plato himself but even those passages in which Aristotle refers directly to a Platonic dialogue are not compared with the original to determine their accuracy or the tendency of Aristotle's interpretation. Robin hoped thus to recover Plato's true doctrine without running the risk of misinterpreting Plato's words which had already been used to support so many divergent interpretations (*op. cit.,* pp. 3-4); but he had still to interpret and pass judgment upon Aristotle's statements, and his self-imposed restriction merely deprived him of the most effective instrument available for this purpose. The obvious deficiency of Robin's method in this respect and the consequent uncertainty of his results have been frequently criticized (e. g. Rivaud, *Rev. Ét. Gr.,* XXI [1908], pp. 401-2; Chevalier, *La Notion du Nécessaire chez Aristote,* pp. 245-9; De Vogel, *op. cit.,* pp. 229-30, 232-3); and Robin himself recognized that the Platonism which his work treats is simply "Platonism" as Aristotle conceived it (*op. cit.,* p. 7), that it is uncertain whether his reconstruction is the Platonism of Plato or of "certain faithful pupils" (p. 601), and that his conclusions should ultimately be compared with the Platonic texts themselves (pp. 5 and 9).[5] A further defect

[5] This part of the program Robin never carried out, although he tried to inter-

of Robin's method is its exclusive concern with the theory of ideas and numbers The Aristotelian treatment of Platonic physical, psychological, ethical, and political theory is not only equally interesting in itself but it may often illuminate obscurities in the treatment of the theory of ideas and it certainly cannot be separated from that treatment and dismissed as a different subject if one hopes to discover and understand the principles which determine Aristotle's exposition and criticism of Plato and the Platonists [6] Finally, although Robin constantly compared Aristotle's criticisms with his own philosophical tenets and frequently tried to show that the former are invalid in the light of the latter—whereby he displayed a tendency to ascribe to Plato the philosophical principles of Aristotle (e. g. *op. cit.*, pp. 101, 266, 570-1)—, nevertheless he failed to consider how Aristotle employs exposition and criticism of different doctrines for the purpose of building up and defending his own philosophical position and what influence this may have had upon his various interpretations of the doctrines so employed. For all that, so far as the theory of idea-numbers is concerned Robin alone did not pick and choose among the Aristotelian texts on the subject but tried to take the whole mass of them into consideration; it is consequently the more impressive that he was often led to impugn the validity and even the good faith both of Aristotle's interpretation and of his testimony (e. g. pp. 72, 98, 181, 192, 260, 428-30, 577, n. 101[1]) and that in the crucial question of the identification of ideas and numbers he found that testimony so ambiguous and contradictory that he based his own solution not on any evidence of Aristotle at all but on a single sentence of Theophrastus (pp. 454-8).

These many diverse judgments of competent scholars [7] might

pret some of the later dialogues in conformity with his reconstruction in his essay, *Etudes sur la Signification et la Place de la Physique dans la Philosophie de Platon*, and in his book, *Platon*, as well as here and there in his complementary thesis, *La Théorie Platonicienne de l'Amour*.

[6] B. Bornemann in his dissertation on "Aristoteles Urteil über Platons politische Theorie" (*Philologus*, LXXIX, pp 70-111, 113-58, 234-57) pointed out that this section of Aristotle's criticism is especially well suited to serve as a touchstone for his reliability since the material with which it deals is all extant.

[7] The titles which I have mentioned are not meant to constitute a bibliography even for the problem of idea-numbers alone For a list of the most important

seem to justify the kind of desperation expressed by Shorey when in reviewing Stenzel's *Zahl und Gestalt* he said that "we do not really know what Aristotle's testimony is. The *Metaphysics,* as it stands, is a hopeless muddle in which no ingenuity of conjecture can find a certain order of thought. It is in particular quite impossible to determine how much of Aristotle's polemic against ideal numbers and of his discussion of the supposedly intermediate mathematical number refers to Plato and how much only to the misunderstandings or developments of Platonism in the Academy" (*Class. Phil.,* XIX [1924], p. 382). Nevertheless, I make bold to believe that this estimate of the situation is unnecessarily gloomy and that even now and even for the special subject of which Shorey despaired there is good prospect of achieving fruitful results from further study of the material at our disposal. Such study, however, must take into consideration all the evidence, neither restricting itself to any single part of Aristotle's testimony nor disregarding any of the available means of controlling that testimony. The diverse opinions hitherto pronounced have for the most part been the result of general impressions, and at best they are conclusions reached from investigations which were in one way or another fragmentary. It is true that we do

works down to 1933 which deal with this subject the bibliography of Ueberweg-Praechter (*Grundriss der Geschichte der Philosophie,* 1^{12}, pp 93* 95* and 114*) should be supplemented by that of Robin (*La Théorie Platonicienne des Idées et des Nombres d'après Aristote,* pp XIV-XVII) and that of Stenzel (*Zahl und Gestalt*^{2}, pp VII-VIII). Whatever in those lists I have myself used as well as some articles which are there omitted and the works which have appeared since 1933 I shall cite at those points of my study where they are taken into consideration I should here mention, however, a few works which came into my hands after the sections of this volume for which they might profitably have been consulted had already been completed Some of them also bear upon material to be treated in the second volume of this work and so will be referred to there These titles are.

A Preiswerk, *Das Einzelne bei Platon und Aristoteles* (*Philologus,* Supplementband XXXII, 1 [1939])

P. Brommer, ΕΙΔΟΣ *et* ΙΔΕΑ (1940)

R. Robinson, *Plato's Earlier Dialectic* (1941)

F. Solmsen, *Plato's Theology* (1942)

J. B Skemp, *The Theory of Motion in Plato's Later Dialogues* (1942).

F. Steckerl, "On the Problem. Artefact and Idea" (*Class. Phil*, XXXVII [1942], pp 288-98)

not possess all the material which we could wish to have; it may even be that we do not possess enough to justify in some important matters a conclusion of high probability; but that too is a decision which can be fairly given only after weighing all the evidence, and the very fact that we know our material to be incomplete lays us under the greater obligation to examine thoroughly all that remains to us.

I therefore intend to outline and analyze all of Aristotle's testimony and criticism bearing upon Plato and the pupils and associates of Plato, to observe in what way he distinguishes or omits to distinguish the doctrines which he ascribes to them, to determine specifically what consistency or inconsistency there may be in his treatment of them, to compare wherever possible his testimony and interpretation with relevant passages in Plato's writings, with the fragments which remain from the writings of Plato's pupils, and with the other ancient evidence concerning their doctrines, to estimate the validity of his criticism, and to decide not merely whether his interpretations are "right" or "wrong" but how and why he came to adopt them and to formulate them as he did. In order to do this it will be necessary to *interpret* Platonic and Aristotelian texts, as well as many others, and to interpret them, furthermore, in their full philosophical intention; but there is no automatic canon in any case, and it is certainly unreasonable to disregard part of our evidence on the supposition that we are thus eliminating the danger of misinterpretation. I shall, however, avoid drawing any conclusions from such general conceptions as the "temperament" or "tendency" of Aristotelian or Platonic philosophy and shall restrict myself to those for the support of which specific passages can be cited. Wherever to my knowledge interpretations have been adopted which differ from mine in a way that would be significant for the question in hand I shall try to give explicit reasons why I have not accepted those interpretations. This may seem to make a tedious business still more tedious; but there can be no approach to common agreement on more general issues until scholars stop passing by in silence the discordant interpretations of specific passages on which any sound decision of those larger issues must depend. If I should seem to give more attention to those scholars with whom I am

constrained to disagree than to those whose interpretations I accept, this and no love of contention is the reason. To all whose work on any part of this subject I have known, both to those whom I shall name hereafter and those whose names whether from lack of occasion or from mere forgetfulness I may omit, to all I wish to acknowledge my indebtedness, for I have learned much from each of them and not least by any means from those with whom I find myself at variance.

The general method of this study will be that which was followed in my book on *Aristotle's Criticism of Presocratic Philosophy*. The fact that Aristotle's reports and criticisms appear as part of his own philosophical disquisitions and have a definite function in those contexts is of primary importance for properly understanding the motivation and consequent character of the criticism, interpretation, and testimony which he gives in different passages. His critique of the Platonists is often connected with that of the Presocratics; and it would have been best, had it been possible, to study the two together instead of separating them in different books as if they were to Aristotle separate subjects. That separation was a practical necessity, however; and its result is that in the present work it will frequently be necessary to give a brief résumé of his critique of the Presocratics and to refer for the fuller analysis to my earlier work on that subject.

Aristotle's criticism of the Presocratics is free of one major problem which complicates the analysis of his treatment of Plato and Plato's pupils Of these men he was a contemporary and an intimate acquaintance. Consequently, we have frequently to reckon with the possibility not merely that he is referring to one of their opinions which was never consigned to writing but also that any passage in their writings which appears to invalidate some interpretation or criticism of his may in fact be later than this interpretation or criticism which may even, at least in its original form, have been responsible for a change in the Platonic doctrine. The various modern theories of Plato's and Aristotle's philosophical development have given rise to many such hypotheses. On these theories as such no judgment will here be passed; but due consideration will have to be given to all the possibilities which they open

with respect to the import of definite passages or the validity of specific interpretations and criticisms made by Aristotle. To this extent the critique of Platonism requires an "historical" analysis for which there is no need or place in the critique of the Presocratics; but even a complete and correct determination of the chronology of Plato's writings and Aristotle's, enlightening and welcome as that would be, would still leave unsolved the real problem before us. Aristotle's critiques are part of his philosophical method; they can be understood and fairly judged only if they are studied at once from the point of view of his own philosophy and from that of the philosopher criticized.

This does not mean that any attempt will here be made to give a full account or even an outline either of Plato's philosophy or of Aristotle's. The doctrines of Plato and the Platonists to which Aristotle refers directly or by indirection will be sought out in the writings of those philosophers and the meaning in their original contexts analyzed for comparison with that which Aristotle gives them; from those writings will also be sought any such statements or explanations by neglect of which Aristotle's interpretations may seem to have been affected or which might support or otherwise explain that part of his testimony to which nothing in the Platonic writings exactly corresponds Aristotle's critiques will at the same time be interpreted in the light of his own philosophical conceptions, and there will be just so much analysis of his doctrines as is necessary for this purpose and for determining the direction and extent to which those doctrines have affected the nature of his interpretations and the validity of his criticisms.

This orientation will be reflected in the arrangement of the material according to the systematic topics of Aristotle's own treatment. An immediate result of this is that the question of the Academic number-theories, which has almost monopolized the attention of recent scholars, will be reduced to something more like its proper proportions in relation to Aristotle's critique as a whole. The question of these number-theories as such will not be considered in this work until the second volume, although in the first there will necessarily be incidental references to it and discussion of some points which will later be seen to have an important bearing upon its solution.

At the end of the whole work the results of the specific

investigations throughout the two volumes will be integrated in a general characterization of Aristotle's method of interpretation and criticism, and for this the results of *Aristotle's Criticism of Presocratic Philosophy* will also be used. Finally an attempt will be made to clarify the situation within the early Academy, the relation of Aristotle's philosophy to the philosophies of the other pupils of Plato, the differences among these, and the relation of all of them to Plato and his teaching.

The works of Aristotle are cited by page, column, and line of the Prussian Academy edition (Berlin, 1831), the fragments of Aristotle by the numbers of the Teubner edition (ed V. Rose, Leipzig, 1886), the Aristotelian commentators by page and line of the Prussian Academy edition (Berlin, 1882-1909), the Presocratics by chapter, section, and fragment number of *Die Fragmente der Vorsokratiker* von H. Diels (5th edition by W Kranz, Berlin, 1934-37); unless otherwise noted, the text of Plato used is that of J. Burnet in the *Scriptorum Classicorum Bibliotheca Oxoniensis*. Most titles and editions (where more than one of the same book has appeared) are given in full wherever cited; but, besides the standard abbreviations of periodicals, some long titles are arbitrarily though consistently abbreviated For such abbreviations in volume I a table of equivalents follows:

Bignone, *L'Aristotele Perduto* = E Bignone, *L'Aristotele Perduto e la Formazione Filosofica di Epicuro*, I and II (Florence, 1936)

Bonitz, *Metaphysica* = H. Bonitz, *Aristotelis Metaphysica, Pars Posterior* (Bonn, 1849)

Calogero, *I Fondamenti* = G Calogero, *I Fondamenti della Logica Aristotelica* (Florence, 1927)

Crit. Pres Phil = Harold Cherniss, *Aristotle's Criticism of Presocratic Philosophy* (Baltimore, 1935).

Hambruch, *Logische Regeln* = E Hambruch, *Logische Regeln der platonischen Schule in der aristotelischen Topik* (Wissenschaftliche Beilage zum Jahresbericht des Askanischen Gymnasiums zu Berlin, 1904).

Heinze, *Xenokrates* = Richard Heinze, *Xenokrates, Darstellung der Lehre und Sammlung der Fragmente* (Leipzig, 1892).

Kluge, *Einwendungen des Aristoteles* = Otto Kluge, *Darstellung und Beurteilung der Einwendungen des Aristoteles gegen die Platonischen Ideenlehre* (Greifswald, 1905)

Lang, *Speusippus* = P Lang, *De Speusippi Academici Scriptis Accedunt Fragmenta* (Bonn, 1911).

Maier, *Syllogistik* = *Die Syllogistik des Aristoteles*, I (Tübingen, 1896), II (1900); Berichtigte Neuausgabe (1936), with same pagination as in the original edition.

Robin, *Idées et Nombres* = L. Robin, *La Théorie Platonicienne des Idées et des Nombres d'après Aristote* (Paris, 1908).

Ross, *Metaphysics* = *Aristotle's Metaphysics, A Revised Text with Introduction and Commentary* by W. D. Ross, I and II (Oxford, 1924).

Ross, *Physics* = *Aristotle's Physics, A Revised Text with Introduction and Commentary* by W. D. Ross (Oxford, 1936).

Shorey, *Unity* = Paul Shorey, *The Unity of Plato's Thought* (Decennial Publications of the University of Chicago, 1904).

Solmsen, *Die Entwicklung* = F. Solmsen, *Die Entwicklung der aristotelischen Logik und Rhetorik* (Neue Philologische Untersuchungen, IV, Berlin, 1929).

Stenzel, *Studien* = J. Stenzel, *Studien zur Entwicklung der Platonischen Dialektik von Sokrates zu Aristoteles*, Zweite Erweiterte Auflage (Leipzig and Berlin, 1931).

Stenzel, *Speusippus* = J. Stenzel in Pauly-Wissowa-Kroll, *R. E.*, Zweite Reihe, vol. VI, columns 1636-1669, *s. v.* Speusippos.

Stenzel, *Zahl und Gestalt* = J. Stenzel, *Zahl und Gestalt bei Platon und Aristoteles*, Zweite Erweiterte Auflage (Leipzig and Berlin, 1933).

Voss, *Heraclides* = Otto Voss, *De Heraclidis Pontici Vita et Scriptis* (Rostock, 1896).

Wilamowitz, *Platon* = *Platon* von U. von Wilamowitz-Moellendorff, Erster Band: *Leben und Werke* (Berlin, 1919); Zweiter Band: *Beilagen und Textkritik* (Berlin, 1919).

Zeller, *Phil. Griech.* = E. Zeller, *Die Philosophie der Griechen*, I, 1 (7th ed., 1923); I, 2 (6th ed., 1920); II, 1 (5th ed., 1922); II, 2 (4th ed., 1921); III, 1 and 2 (5th ed., 1923).

The second volume will contain complete indices of the passages of Aristotle, Plato, and all other Greek and Roman authors discussed in both volumes.

I desire here to record my sincere gratitude to Dr. Ludwig Edelstein for reading the manuscript of the first volume and to Dr. Evelyn H. Clift for making the typescript and for her invaluable help in seeing the volume through the press.

BALTIMORE,
October, 1942

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CHAPTER ONE

Diaeresis, Definition, and Demonstration

In the *Topics*, which is a long series of rules for testing dialectical propositions by determining whether or not the predicate stands to the subject in the relation of genus (including differentia), property, definition, or accident, the material which Aristotle used has for some time been recognized as largely an inheritance from the dialectical practices of the Academy, and even the processes of "topical" argument have been traced back to the Platonic method of controlling the results of diaeresis.[1] Of the number of Academic doctrines used as examples of propositions which may be tested by the topic under discussion two are especially interesting for the present investigation because they indicate a way of employing the Platonic ideas to establish or overthrow a conclusion.

Topics 137 B 3-13

One can refute the attribution of a property to a given subject on the ground that it is not a property of the corresponding idea in the sense in which the subject to which the property was attached is meant, or one can demonstrate that a given subject has a property which has been denied to it by showing that the corresponding idea has this property and has this property not *qua* idea but *qua* idea of the given subject. For example, immobility cannot be predicated of man as a proprium because, while it is a characteristic of the idea of man (αὐτοάνθρωπος), it is so not of the idea *qua* man but *qua* idea; "complex of body and soul," on the other hand, being a characteristic of the idea of animal *qua* animal and not *qua* idea, must be a proprium of animal. In other words, the relationship between idea and property on the one hand and between

[1] For the motivation of the arrangement of the *Topics* see *Topics* 101 B 11-37. On the relationship of the material of the *Topics* to Academic dialectic cf. E. Hambruch, *Logische Regeln*, for "topical" argument as a control of diaeresis cf. F. Solmsen, *Die Entwicklung*, p. 177. On the dialectical syllogism as the basis of the *Topics* cf. against H. Maier (*Syllogistik*, II, 2, p. 78, n. 3), P. Shorey, "The Origin of the Syllogism," *Class. Phil.*, XIX (1924), pp. 1-2 and F. Solmsen, *Die Entwicklung*, pp. 151-153.

subject and property on the other is assumed to be identical, and this assumption requires the "analysis" of the idea into existential and essential moments and the dismissal of the former as irrelevant. The Platonic conception of the idea as the *identification* of essence and existence is silently denied; and this fact, in conjunction with other passages in the *Topics* (143 B 23-32; 147 A 5-11; 154 A 16-20) which furnish means of attacking "those who posit ideas," should be sufficient to show that Aristotle had at this time rejected the theory of ideas.[7] This topic itself, however, in its derogation of the essential feature of the doctrine of ideas, depends for its effectiveness upon the supposition that the Platonic respondent will inadvertently allow his interlocutor to substitute for the conception of idea an abstract class name which has the characteristics of an Aristotelian universal; like all the topics it is a weapon to be used against a particular opponent in argument, and like a number of others it assumes that the opponent will be an adherent of the theory of ideas who can be forced to abandon a proposition which he has enunciated by being driven to admit either that a property which he has assigned to a given subject does not comport with the idea of that subject or that a property which he has denied to a subject is involved in the idea. The "analysis" of the idea, however, which is the fundamental part of the procedure is a dialectical shift adapted to the assumptions of the opponent and does *not* mean that Aristotle has converted the idea into a logical term and is indifferent to the question of its subsistence.[8] It is an implicit denial of the

[7] *Contra* H. von Arnim, "Das Ethische in Aristoteles' Topik" (*Sitzungsberichte der Akad. der Wiss. in Wien*, CCV, 4 [1927]), p. 128: "Diese Stelle enthält nichts, was uns vermuten lassen könnte, dass Aristoteles selbst oder ein Teil seiner Hörer die Existenz der Ideen nicht mehr anerkannte. Nur für solche die sie anerkannten, war die Anweisung nützlich." (Von Arnim admits, however, that other passages of the *Topics* give a different "picture of the situation.") *Op. cit.*, pp. 130-131 (on *Topics* 148 A 14-21), von Arnim argues that in the *Topics* Aristotle has completely separated γένος from idea but still considers the question of the existence of ideas to be debatable. On von Arnim's attempt to show that *Magna Moralia* 1182 B 9 ff. and 1183 A 27 ff. (considered by him to be an early work of Aristotle) allow the existence of ideas in some sense cf. R. Walzer, *Magna Moralia und aristotelische Ethik*, pp. 262-269.

[8] Contrary to the conclusion of F. Solmsen (*Die Entwicklung*, pp. 190-191).

χωρισμός, and it assumes on the part of Aristotle and of anyone who uses the topic against a Platonist the clear recognition of the distinction between the Aristotelian universal and the Platonic idea. The choice of the second example in this topic, the demonstration that the idea of animal must comprise an element of corporeality, is itself an indication of sarcastic antagonism to the theory of ideas and expressive of the attitude that even for adherents of the theory the ideas as such are useless. The wording of the passage implies that the terms used for the ideas, αὐτοάνθρωπος, αὐτοζῷον, evince a futile effort to combine transcendental substantiality and immanent universality; the transcendence represented by the addition of αὐτό is dismissed as superfluous, because the special properties of each idea depend not upon this, not upon its ideal nature, but upon its synonymy with the particular subject of the proposition enounced. It is significant that this very analysis is used in the *Metaphysics* (1040 B 27-1041 A 5) as an argument against the existence of the ideas. There Aristotle argues that no universal exists apart from individuals and that no universal term is a substance; the adherents of the ideas make their mistake because, being unable to say what the imperishable substances apart from individual sensible substances are, they make them of the same kind as the perishable substances merely adding the word αὐτό to the names of the latter, although the existence of imperishable substances does not depend upon our knowledge of them. In other words, he objects that the ideas are merely a product of the confusion of transcendent substances and immanent universals; the topic before us indicates by its analysis and its terminology that this same criticism of the ideas is already presumed

Topics 148 A 14-22

There is another topic which proves that the "analysis" used in the previous topic is a conscious dialectical trick and that Aristotle did not expect any *Platonist* to make use of it either in attack or in defense. This is a topic which he explicitly labels as useful for the refutation of definitions proposed by adherents of the theory of ideas[4] Plato, for example, attached the determination

[4] In 148 A 21 read τούτους with the Berlin edition (so also now F. Solmsen, *Die Entwicklung*, p 190, n. 3). The following ἔτι (line 23) makes Waitz's τούτοις impossible

"mortal" to his definitions of animals; inasmuch as the idea, however, is not mortal, the definition does not comport with the idea. This procedure is then generalized: the adherents of the ideas consider them to be impassive and immobile, so that the definitions of all things which have active or passive characteristics must be at variance with the respective ideas. Here the distinction which was essential to the previous topic is neglected in order that the nature of the idea *qua* idea may be used to overthrow the proposed definition, and there is no hint that the Platonic respondent might think of defending himself with such a distinction or that Aristotle himself allows the ideas to be susceptible to such "analysis." The extent of the possible application of this topic to Platonic definitions is obvious; the implications of the topic are indicated by Aristotle himself in a later reference to it. This topic was introduced with the words: Σκοπεῖν δὲ καὶ ἐπὶ τὴν ἰδέαν εἰ ἐφαρμόσει ὁ λεχθεὶς ὅρος. In *Topics* 154 A 16-20 he gives as an example of the most effective topics that which consists of glancing at the individual and seeing whether the definition fits in the case of the species (καὶ ἐπὶ τῶν εἰδῶν σκοπεῖν εἰ ἐφαρμόττει ὁ λόγος), for the species is univocal. This topic, he says with a backward reference, is useful against those who posit the existence of ideas. In other words, the method rests upon an identification of the idea with the notion of species or class (the precise technical meaning of εἶδος should probably not be pressed here) and produces the overthrow of the proposed definition by showing that characteristics which *must* be predicated of the class cannot be characteristics of the idea because it is an eternal substance. The assumptions of this topic, too, occur in the *Metaphysics* (1059 A 10-14) as an argument against the possibility of ideas; and there the same example, the characteristic "mortal," also recurs. The argument there runs:—since mortality and immortality are essential attributes, what is mortal and what is immortal must be different in kind; and the result of this is that there can be no such ideas as some postulate, for—if there were—there would be a mortal man and an immortal man (i. e. the sensible and the ideal man would have contrary essential attributes), although the ideas and the indi-

viduals are supposed to be the same in kind and not merely homonymous.[6]

These two topics, then, imply the rejection of the theory of ideas on grounds which are made explicit for that purpose in other writings Their purpose, however, is merely to furnish a means of overthrowing definitions of the Platonists, and their method consists in developing the inconsistencies in the ideas viewed at once as transcendental existence and immanent essence. This indirect attack upon the theory is in another topic developed from an argument against the use of a particular form of dichotomy and generalized into a demonstration that the ideas preclude the possibility of definition by genus and specific differentia because they, as subsisting unities, cannot comprise within themselves the contrary characteristics essential to the subordinate species

This topic begins by stating that division of the genus by negation is not to be allowed because in that case the genus would partake of the species and of the differentiae, that is, differentia and species would both be predicated of the genus,—which is absurd (cf *Topics* 144 A 28-B 3; 121 A 10-19). An example of such an error is the definition of line as length without breadth; since all length must have or lack breadth, the genus of line would itself have breadth or lack it, but "length with breadth" and "length without breadth" are both statements of a species, for "without breadth" and "having breadth" are differentiae. This topic is then directed especially against those who posit the existence of ideas:—if there is absolute length (αὐτὸ μῆκος) it cannot either have or lack breadth, for whichever were true of the genus would have to be true of all lengths and there do exist lengths with breadth as well as those without breadth. Consequently only those who say that the genus is numerically one are liable to refutation by this topic; and this they do who posit the ideas, in that they treat as a genus absolute length or absolute animal Here, too, while the purpose of the topic is merely the destruction of definitions reached through the pro-

Topics 143 B 11-32

[6] On *συνώνυμοι* and *ὁμώνυμοι* in Aristotle's criticism of the ideas see note 102 *infra* and cf. Robin, *Idées et Nombres*, p. 608 (n. 26)

cess of dichotomy by negation, this criticism leads immediately to the more extensive argument that the transcendental universal cannot fulfill the requirements of a genus because it cannot comprise the characteristics of the subordinate species. In this passage is explicit the objection that the transcendental idea is not only useless for diaeresis and definition but positively destroys the possibility of both; but the implications go beyond the mere distinction between immanent universal and transcendent idea and the proof that the latter cannot be the genus,[6] for to Aristotle this very fact was conclusive refutation of the existence of ideas. The identification of the ideas with genera was not for Aristotle a means of salvaging that portion of the Platonic theory which he considered to be useful for his own doctrine, as if the ontology of the ideas could be disregarded without affecting the validity of the logical element. Whether rightly or wrongly, he attributed this identification to the Platonists themselves and even tried to find the original motivation for the theory in their supposition that substantiality varies directly with universality.[7] The statement of the rule that the genus cannot partake of the differentiae is introduced at the beginning of his investigation into the unity of definition in the *Metaphysics* (1037 B 18-21) and recurs in the course of this investigation as an argument against the existence of ideas (*Metaphysics* 1039 B 2-6). The problem of the unity of definition is insurmountable for those who posit the ideas as separate substances and at the same time construct the species of the genus and differentiae (1039 A 24-26), for—among other absurd consequences—the idea of animal will have to partake of such contrary characteristics as "two-footed" and "many-footed" simultaneously. No other explanation will account for the possibility of predicating "two-footed" and "many-footed" of animal, for, if the element of animality is different in each species, unanswerable questions arise concerning the

[6] H. von Arnim (*op. cit.*, pp 128-9) on this passage: "Zum mindesten wird die Unmöglichkeit erwiesen, dass die platonische Idee Gattungsbegriff sein kann." His "zum mindesten" hardly does justice to the implications of the argument.

[7] Cf. *Metaphysics* 1042 A 11-16, 1069 A 26-28; 1086 A 31-B 13 (n. b. 1086 B 9-10. ταύτας δὲ τὰς καθόλου λεγομένας ἐξέθεσαν). *Metaphysics* 991 A 29-31 may be an indication of the way in which Aristotle arrived at this interpretation.

relationship of this element to the transcendental idea of animal. The impossibility of this situation proves that there are no Platonic ideas (1039 B 7-19). Aristotle, then, by his assertion in the present topic that the assumption of transcendental ideas is equivalent to making the genus numerically one outlines one of the arguments against the existence of the ideas as such; moreover, the clearly implied doctrine that the genus cannot be numerically one indicates that behind this topic lurks the theory which in the *Metaphysics* (1037 B 10-1039 B 19) is developed in relation to the unity of definition and substance and out of which springs the attack on the ideas which is referred to above, namely that the genus is in some way or other the matter for the last differentia which is the form (1038 A 5-9 and 25-35) [8]

Although the substance of these topics is elsewhere used to disprove the existence of ideas, Aristotle does not here refer to such a use of them, for the *Topics* is not concerned with ontology; the practical method of dialectic is the sole concern of this writing, and topics which employ the theory of ideas are described only because Aristotle and his auditors would frequently have occasion to debate with Platonists who would be expected to abandon any conclusion that could be plausibly represented as involving contradictions to the requisites of transcendental ideas. It will be noticed, however, that these three topics taken together afford a method whereby almost any proposition of a Platonist could be refuted, for they all endeavor to force the respondent to detach his definitions from the ideas The distinction between the transcendental existence and immanent essence of the idea is used to make the Platonist admit the attachment of properties which comport with the latter and to deny the predication of those which are in accord with the former. The subjects of the resulting propositions could not possibly be ideas. Furthermore, if no idea can be perishable, active, or passive, it will be impossible to define anything which has any such characteristic so long as definitions are referred to the ideas.[9]

[8] Cf the keen analysis of this theory of the unity of definition by G Calogero, *I Fondamenti della Logica Aristotelica*, pp 136-142

[9] If τὸ ποιητικὸν ἢ παθητικόν be understood in its widest sense, this objection could be used against every conceivable definition. Cf. Plato, *Sophist* 248 C 249

Finally, since definition by genus and specific differentia is possible only if the genus be not numerically one, the idea as a unitary genus is incompatible with definition generally.

Topics 146 B 36-147 A 11

An appendix to another topic furnishes a further example of this method of confounding the adherents of the theory of ideas by playing off against each other the phenomenal and absolute or immanent and transcendental phases that can be analyzed out of their theory. In the case of a number of subjects such as appetencies, definitions which do not include the element "apparent" can be attacked on the ground that desire, for example, is not a "yearning for the pleasant" but a "yearning for the apparently pleasant." Obviously this topic is not restricted in its usefulness to any particular set of theorists; but, Aristotle continues, if the respondent fulfills this requirement, one can still overthrow his definition if he believes in ideas, for the ideas are supposed to stand in relationship to one another and there is no idea of anything merely apparent, so that "desire itself" would have to be of the "absolutely pleasant" and there could be no "desire" of the "apparently pleasant" or "willing" of the "apparently good." Here, as in the second topic considered above (*Topics* 148 A 14-22), the essence of the attack on the Platonic definitions is the emphasis upon the ontological distinction between the phenomenal world and transcendental ideas. The topic is not restricted in its applicability to "ethical" propositions as the special examples mentioned might seem to suggest; it asserts that correlative terms in the phenomenal world can have reference only to phenomena and that, consequently, transcendental ideas cannot be used in the definition of any such terms. The range of this topic as a weapon against the use of ideas in definition and its implications for the hypothesis of ideas as such are developed by Plato himself in the *Parmenides* (133 C-134 E; see note 189 *infra*).[10]

D, where in this sense it is brought against "the friends of the ideas" (see note 376 *infra*).

[10] The notion of H. von Arnim (*op. cit.*, pp. 129-130) that this topic contains two apparently contradictory arguments both of which are in Aristotle's sense true is beside the point. The problem, which in *Eth. Nic.* 1113 A 15-B 2 is solved by a distinction between the ἁπλῶς καὶ κατ' ἀλήθειαν βουλητόν and the

Still another topic is illustrated by an example which presents the theory of ideas in a form that is reminiscent of Plato's *Parmenides*. One should see, says Aristotle, whether a proposed predicate would require that the subject have mutually contradictory characteristics. Such would be the case if one were to say of the ideas that they exist in us, for they would then be in motion and immobile, sensible and intelligible, since those who posit ideas suppose them to be immobile and intelligible but, being in us, they would have to move with our motion and would have to be sensible because the form of each thing is known to us by means of sight (i e sensation). In *Parmenides* 132 B-C Socrates suggests that the ideas may be *νοήματα ἐν ψυχαῖς*, a suggestion which is promptly abandoned because it would require all things to consist of "thoughts." This and Aristotle's wording here (*εἰ τὰς ἰδέας ἐν ἡμῖν ἔφησεν εἶναι· . . . συμβήσεται*) might indicate that the example is drawn from the suggestion in the *Parmenides* and was not meant as a reference to any real variation of the theory of ideas. The arguments in refutation, however, are different from those in the *Parmenides* and similar to one of the objections which in his work, *περὶ ἰδεῶν*, Aristotle brought against the special form of the theory of ideas advocated by Eudoxus (Alexander, *Metaph.*, p. 98, 21-22); but the identification of the example here given with that form of the Platonic theory must be postponed until Aristotle's explicit references to Eudoxus have been examined (Appendix VII *infra*). Nevertheless, whether we have here a reference to a theory really advocated or a merely artificial example, the topic

Topics 113 A 24-32

ἑκάστῳ βουλητόν, is an ethical problem that is not considered here, much less solved "noch mit Hilfe der *αὐτὴ βούλησις* die sich auf das *αὐτὸ ἀγαθόν* bezieht" Here the object is merely dialectical· a definition based upon transcendental ideas cannot apply to phenomenal objects, although any general definition must apply to all possible cases of the thing defined The success of the topic depends upon getting the Platonist to admit that *ἡ βούλησις ὄρεξις φαινομένου ἀγαθοῦ* and then reverting to the Platonic thesis that *αὐτὴ βούλησις* can apply only to *αὐτὸ ἀγαθόν*, the possibility that the respondent would thereupon counter with the conclusion that of *φαινόμενον ἀγαθόν* there can be only *φαινομένη βούλησις* and that, therefore, the first definition was correct is not here envisaged.

On the meaning and "extent" of relative terms for Plato and Aristotle see Cornford, *Plato's Theory of Knowledge*, pp 282-284.

itself indicates a method (which is applied in the topic at 148 A 14-22) of overthrowing Platonic definitions by developing the inconsistency between transcendent idea and immanent universal, for Aristotle does not allow any distinction between them on the part of the Platonists.

There are in the *Topics* numerous incidental references to definitions of Plato and the Platonists brought in by way of illustration to dialectical rules which are neither restricted to refutation of Academic definitions or doctrines nor more especially adapted to this purpose. Significant in this connection is the comparatively frequent reference to Academic definitions of the soul.

The Platonic definition of soul as self-moved mover (cf *Phaedrus* 245 C-E, *Laws* 895 E-896 A) is cited as an example of the confusion of genus and accident, an instance of the predication of that as genus which is not entailed in the essential character of the subject. Self-motion in respect of the soul is, like white in respect of snow, an accident, for the soul is not essentially motion any more than snow is essentially white. Moreover, neither motion nor white signifies what the subject is but merely what its activity or affection is, so that neither of them is given in the statement of the essence Similarly this definition can be overthrown by showing that the definition of accident fits that which is here given as genus, for self-motion as well as whiteness can either belong or not belong to a subject and this is the nature of accident.

Topics 120 B 21-35

The test which shows that the subject can occur apart from the supposed genus or differentia and so proves that these are not truly genus or differentia is illustrated by the example of the soul and motion; the latter cannot be the genus of soul since it does not always accompany soul. For the same reason true and false cannot be differentiae of opinion [11] The definition of the soul which

Topics 123 A 15-19

[11] This example, also, seems to refer to a Platonic doctrine (cf e.g. *Sophist* 263 D-264 B and *Philebus* 36 C D, 37 B) Alexander (*Top*, p 321, 18-19) cites as the instance contradictory ἡ τῶν μελλόντων δόξα; for the Aristotelian doctrine concerning this kind of opinion see *De Interpret.*, chap. 9, especially 19 A 23-B 4 and H. Maier, *Syllogistik*, I, pp. 202 ff.

makes its genus motion also transgresses the rule that, when a species stands in like relation to two possible genera, the "better" of the two must be made its genus. The soul is held to be the cause both of motion and of rest, Aristotle says, and consequently, if rest is the "better," this and not motion should have been made the genus. The topic makes use of Academic doctrine to disclose an inconsistency in the definition;[12] it was Xenocrates who developed the theory that the soul contains within itself the principle of rest as well as that of motion (Plutarch, *De Animae Proc.* 1012 F), although he defined it simply as the self-moving number (*ibid.* 1012 D; Xenocrates, *frag.* 60) That the superiority of rest to motion was an Academic assumption could be deduced from the customary comparisons of the ideas and phenomena (e g *Timaeus* 27 D 5-29 D 3, 30 A; cf. *Sophist* 249 B 12-C 5) and from such passages as *Timaeus* 57 E-58 A (cf Aristotle, *Physics* 201 B 19-21 and Eudemus *apud* Simplicius, *Phys.*, p. 431, 8 ff.) and *Timaeus* 37 D, although the statement of Eudemus to the effect that Plato called motion τὸ μὴ ὄν, if this phrase be taken in an absolute sense, is contradicted in the *Sophist* (249 B). The same principle is implied by the doctrine of Speusippus that the good is the completion of a process of development (*frag.* 34 a-f, Lang) and by Aristotle's own thesis of the difference between motion and actuality (*Physics* 201 B 27-202 A 3, *Metaphysics* 1048 B 28-35). Here the common element in Plato's and Xenocrates' definitions is attacked, although the topic could be employed against the former only by tacitly imputing to Plato what was really a complete innovation on the part of Xenocrates, the

Topics 127 B 13-17

[12] Cf E Hambruch, *Logische Regeln*, pp 19-20, who connects the topical rule from inspection of the contrary (*Topics* 106 A 36, 123 B 1 ff) with § 68 of the so-called Διαιρέσεις Ἀριστοτέλους (Rose, *Aristoteles Pseudepigraphus*, p. 695) The rule that two contraries must be themselves genera or of the same genus or in genera which are contraries (*Topics* 123 B 3-12, 153 A 33-36) occurs also in *Categories* 14 A 19-20 where ἀγαθόν and κακόν are given as genera that are subsumed in no higher genus; this Hambruch compares with the view of Plato's pupils that the final opposites of all Being are to be equated with good and evil. (See pages 36-37 *infra*, but note that from *Metaphysics* 1075 A 36 37 and 1092 A 14-15 the conclusions of Speusippus appear to have differed from those of the rest of the Academy.)

introduction of the principle of rest as a component part of the soul (Plutarch, *De Animae Proc.* 1024 D; Heinze, *Xenokrates*, p. 66). On the other hand, in illustrating the rule that the definition should contain no superfluous element, Aristotle stresses the difference between the definitions of Plato and Xenocrates. Plato defined soul as that which moves itself; therefore, the addition of "number" to the definition is superfluous, for without this addition the definition is proper and sufficient to describe the essence. If, however, "self-moving" is a proprium, the definition does not give the essence unless "number" be added. In other words, if "number" is the genus and "self-moving" the specific differentia, Plato's definition fails to make clear the essence. Aristotle dismisses the question here with the remark that it is hard to say how the matter really stands. To decide between these definitions would require an investigation of psychology (cf. *De Anima* 408 B 32 ff. and Alexander, *Top.*, p. 429, 27); here it suffices for the dialectician to demonstrate that the two Academic definitions are really incompatible. This part of Xenocrates' definition, however, is used elsewhere in the *Topics* as an example of a genus falsely attributed. If no differentia of the genus is applicable to the given species, the genus is not applicable either: for example, neither even nor odd can be predicated of soul; consequently, number cannot be the genus of soul. The same means of refutation had been given earlier (*Topics* 120 B 3-6) under the rubric of the division of the assigned genus into species (cf Alexander, *Top.*, p 293, 10). by division one shows that all number is either even or odd; if the soul is neither even nor odd, it cannot be a number. This variant of the refutation is apparently couched in the Academic terminology, inasmuch as Aristotle elsewhere (*Topics* 122 B 18-24) argues that "odd" is a differentia and not a species of number, an objection for which the motivation can be seen in the terminology of Plato's *Politicus* 262 E: *κάλλιον δέ που καὶ μᾶλλον κατ' εἴδη καὶ δίχα διαιροῖτ' ἄν, εἰ τὸν μὲν ἀριθμὸν ἀρτίῳ καὶ περιττῷ τις τέμνοι τὸ δὲ αὖ τῶν ἀνθρώπων γένος ἄρρενι καὶ θήλει.* (The second part of this example is probably in Aristotle's mind when he denies that "male" and "female" are species, *Metaphysics* 1058 A 29 ff., especially

Topics 140 B 2-6

Topics 123 A 11-14

B 21-23; cf the comparison of the differentia of sex with mathematicals, *Metaphysics* 1078 A 5 ff.) [18] Furthermore, number can be shown not to be the genus of soul by the topic which investigates whether a given species takes part in something that cannot possibly be predicated of anything subsumed under the supposed genus. So, if the soul shares in life and no number can be alive, soul cannot be a species of number

Topics 123 A 23-26

From statements of Xenocrates Aristotle draws examples for certain other topics and here mentions him by name, whereas in the citation of the definition of soul the criticism is anonymous. Xenocrates had said that εὐδαίμων applied to the individual with a virtuous soul; this Aristotle gives as an example of the etymological topic which tries to establish a thesis by reference to the original significa-

Topics 112 A 32-38

[18] In *Topics* 142 B 11-19 Aristotle attacks the definition of "even number" which runs ὁ δίχα διαιρούμενος, arguing that here the "lower" terms are used to define the "higher" because the notion of halving is derived from that of two which is even and that such a process of definition is a *circulus in definiendo* because the use of the term δίχα amounts to using "even" since it means "to be divided in two" and two is even E Hambruch (*Logische Regeln*, p 8) refers this criticism to Plato, *Laws* 895 E where the λόγος of ἄρτιον is said to be δίχα διαιρούμενον ἀριθμόν. Since *Topics* 142 B 7-10 argues against the definition of "odd" as "that which exceeds the even by a unit" on the ground that even and odd being coordinated divisions of the same genus are ἅμα φύσει and so cannot be used to define each other and since § 64 of the Διαιρέσεις Ἀριστοτέλους (*Aristoteles Pseudepigraphus*, p. 694) calls odd and even εἴδη τοῦ ἀριθμοῦ, Hambruch believes that in these passages Aristotle has Academic definitions and doctrines in mind. Aristotle himself denies that even and odd are species of number; his designation of them in this context (*Topics* 142 B 10) as differentiae shows that in *Topics* 128 A 20-29 his arguments for distinguishing differentia and genus, in opposition to those who suppose that the differentia is predicated of the species in its essence, are directed against Academic procedure.

The second example of a definition which errs by using the "lower" terms to define the "higher" (τὸ ἀγαθὸν ἕξιν ἀρετῆς, 142 B 12-13) is also apparently drawn from the Academy, for the Διαιρέσεις Ἀριστοτέλους (§ 36, *Aristoteles Pseudepigraphus*, p 686) give τὸ ἔχον ἀρετήν as one division of τὸ ἀγαθόν and say of things called good in this sense ἕκαστον λέγεται ἀγαθὸν εἶναι ἐὰν ἔχῃ τὴν ἀρετήν Aristotle's objection that virtue itself is ἀγαθόν τι corresponds with another division in this very chapter αὐτοῦ (*scil* τοῦ ἀγαθοῦ) ἐν μὲν ἀρετῇ καὶ δικαιοσύνῃ . . ὅτι τούτων ἑκάτερον ἀγαθὸν λέγεται εἶναι It is possible that Aristotle may have had in mind the applicability of this topic to Xenocrates'

tion of a word. The δαίμων is the soul of each person, said Xenocrates, and therefore ὁ εὖ τὴν ψυχὴν ἔχων is εὐδαίμων. Later (*Topics* 152 A 5-30) Aristotle again refers to this doctrine but implies that Xenocrates established it differently by arguing that the virtuous and the happy lives are of all lives most choiceworthy and that, since the most choiceworthy and the greatest (i. e. that which manifests the highest degree of anything) must be one, the virtuous life and the happy must be identical. The preservation of an argument parallel to the etymological argument here and complementary to it in proving that πονηρός = κακοδαίμων (Xenocrates, *frag.* 83) makes it appear that Xenocrates used both of the methods of proof attributed to him by Aristotle. As an example of the error which consists in predicating of a subject the same thing more than once Xenocrates' characterization of intelligence is quoted: φρόνησις, he said, is that which defines and contemplates realities. Aristotle objects that to define is itself to contemplate in a certain way, so that the addition of " and contemplates " is tautological.[14] The theory of atomic lines, however, is introduced anonymously as exemplifying the test for a falsely attributed genus; this test consists of looking for a case specifically undifferentiated that nevertheless cannot be subsumed under the supposed genus. If one who posits atomic lines should give the indivisible as genus, the attribution can be refuted by showing that divisible lines cannot fall under this genus although all straight lines are

Topics 141 A 4-9

Topics 121 B 19-23

definition of the *summum bonum* (cf Xenocrates, *frag.* 77: τὴν εὐδαιμονίαν ἀποδίδωσι κτῆσιν τῆς οἰκείας ἀρετῆς), for that εὐδαιμονία is τὸ ἀγαθὸν par excellence was an axiom of Greek ethical thought (cf. Plato, *Philebus* 11 D).

[14] Xenocrates' distinction of two kinds of φρόνησις, practical and theoretical (cf. Xenocrates, *frag* 6), may have been a development from the difficult position mentioned by Aristotle (*Topics* 121 B 30-32) in which φρόνησις was considered to be both virtue and knowledge, neither of which as genus comprehended the other, a thesis which may be identical with that mentioned in *Topics* 120 A 28 according to which φρόνησις *alone* of the virtues is knowledge. Cf. E Hambruch, *Logische Regeln*, pp 17-18 For the epistemological significance of Xenocrates' distinction see pages 67-68 *infra*.

The definition, ἡ ἐπιθυμία ὄρεξις ἡδέος, which Aristotle here considers and defends against the topic of multiple predication (*Topics* 140 B 27-141 A 4) was Academic in origin; cf Διαιρέσεις Ἀριστοτέλους, § 21 (*Aristoteles Pseudepigraphus*, pp. 682-683): ἔστι δὲ ἡ μὲν τοῦ ἡδέος ὄρεξις ταῖς ἐπιθυμίαις ὑπηρετεῖν.

specifically undifferentiated. Although Aristotle nowhere assigns the doctrine of atomic lines to Xenocrates by name and does say explicitly that Plato often posited atomic lines (*Metaphysics* 992 A 20-22), it was Xenocrates who was generally known as the chief exponent of the theory, at least one passage of Aristotle also indicates that he assigned this theory to Xenocrates particularly. (*Metaphysics* 1080 B 28-30, cf. the testimonia gathered by Heinze, *Xenokrates, frag.* 43 In *frag.* 41, *Physics* 187 A 1 does not refer to the Platonists, cf. Cherniss, *Crit. Pres. Phil.*, p. 75, n 303 and Ross, *Aristotle's Physics*, pp. 480-481 [contrary to his previous opinion, *Aristotle's Metaphysics*, I, pp 206-207].) Consequently, although the illustration of the topic deals with a thesis which Aristotle may have thought common to Plato and Xenocrates, the form of the theory held by the latter and his followers is probably the direct object of the criticism. While the form of Aristotle's expression does not indicate that Xenocrates himself designated the indivisible as the genus, a comparison with the topic at 143 B 11-32 shows how Aristotle thought that he could force this admission. There the definition of line as "length without breadth" was impugned by showing that absolute length must either have breadth or lack it and that in either case some lengths would not be subsumed under the genus. That topic was said to be useful only against those who posit ideas and proceeded by treating the idea as a numerically single genus. Now if the pseudo-Aristotelian treatise on indivisible lines represents in its first pages the arguments of Xenocrates (cf Apelt, *Beiträge zur Geschichte der griech. Philosophie*, p 269, n. 1), Xenocrates argued that the idea of line must be indivisible (*De Lin. Insec.* 968 A 8-11); from the analogy of the treatment of αὐτὸ μῆκος in the other topic it is clear that this statement would seem to Aristotle to justify his assumption that Xenocrates must then admit that the genus of line is *the indivisible* and so open the way for him to proceed with his refutation in the same fashion The possible defense that divisible lines are themselves logically subsequent to the indivisible lines, since they are only compositions of these, engages his attention no more than does in the other case the consideration that there really are no lines with breadth, inasmuch as

what has breadth is a surface and no line at all. The use of one Academic doctrine against another, a method noted in the previous examples, is given a peculiar turn in the topic of finding for the given species a genus other than the attributed genus and which neither comprises the latter nor is comprised by it. Here the illustration is the thesis that knowledge (ἐπιστήμη) is the genus of justice (δικαιοσύνη); but virtue (ἀρετή) also is the genus of justice and neither genus is subsumed under the other, so that the assumed genus, knowledge, cannot be correct. The statement that justice is at the same time knowledge and virtue occurs in the Platonic dialogues (e. g. *Republic* 350 C, 351 A· εἴπερ σοφία τε καὶ ἀρετή ἐστιν δικαιοσύνη; cf. *Hippias Minor* 375 D-E with Aristotle, *Eth. Nic.* 1129 A 11-17), but the assumption that no one could subsume virtue under knowledge as its genus contradicts Aristotle's own interpretation of Platonic and Socratic ethics elsewhere (*Eth. Nic.* 1144 B 17-30). If one were to understand ἀρετή here, however, in its wide sense and not as "moral virtue," the assumption would be true; and anyway it appears that at this time no one even in the Academy treated virtue in general as knowledge (cf *Eth. Nic.* 1144 B 21-25, *Topics* 120 A 27-31 [ὅτι ἡ φρόνησις μόνη τῶν ἀρετῶν ἐπιστήμη], Διαιρέσεις Ἀριστοτέλους, §8). The inconsistency here developed is, then, one arising between a later Academic point of view and the interpretation of an earlier one The logical rule used to refute the predication of knowledge as the genus, namely that one species can stand under two genera only when one of the genera is subaltern to the other, is applied by Aristotle frequently (*Topics* 107 A 18 ff., 122 B 1 ff, 139 B 38 ff., 144 A 11 ff.), and Hambruch (*Logische Regeln*, p 17) has made it seem probable that it was a recognized rule of Academic logic. Here, however, the rule undergoes an alteration. There are cases, Aristotle says, in which it causes embarrassment, for some people hold that insight (φρόνησις) is both virtue and knowledge and that neither of these genera is subsumed under the other It is true that not everyone admits insight to be knowledge; but, if the truth of this be granted, then it is apparently necessary that two genera of one species be *either* subaltern one to the other *or* both be subsumed under a single genus. The

Topics 121 B 24-122 A 2

rule in this form, however, does not invalidate the attribution of both virtue and knowledge as genera, for virtue and knowledge are both subsumed under a single genus, namely state or disposition (ἕξις καὶ διάθεσις). The topic is then restated in this form: if the two genera are not subaltern one to the other or both to a third, the alleged genus is incorrect.[15] Hambruch (*Logische Regeln,* pp. 17-18) identified as the persons who made insight both virtue and knowledge Xenocrates and his followers; but, if Aristotle means to attribute this thesis to Xenocrates, he is treating as identical the two kinds of insight which Xenocrates distinguished, for the latter made knowledge (σοφία) a species of φρόνησις (*frag.* 6) and, since for him the genus φρόνησις must have been ἀρετή for man (*frag.* 77), ἐπιστήμη would have been a species of virtue and not a genus of insight on the same plane as virtue itself. Xenocrates, then, is more probably included among those who do not admit that insight is knowledge (although he asserted that knowledge is a kind of insight); and so the objection first brought against the instance that insight is both virtue and knowledge is itself Academic. This is quite in the manner of the *Topics,*—for the instance, too, is an Academic theory, although not Xenocratean. Reference already has been made to the thesis mentioned by Aristotle (*Topics* 120 A 28) that insight alone of the virtues is knowledge, and this theory was apparently based upon the doctrine that φρόνησις is the virtue of the rational part of the soul, a

[15] Hambruch (*Logische Regeln,* pp 18-19) points out that the parallel rule for differentiae, stated in *Topics* 107 B 19 ff, *Categ* 1 B 16 ff, is appealed to in *Topics* 144 B 13 ff but is modified in the same way as it was for genera in 144 B 20 ff When, however, Hambruch says that this modification is made in view of Plato's *Politicus* 266 E, he misinterprets the Platonic passage, for there πεζόν = ξηροβατικόν and is divided into δίπουν and τετράπουν, δίπουν then being divided into ψιλόν and πτεροφυές (= πτηνόν) That is, πτηνόν is there a division of δίπουν which is a division of πεζόν; Hambruch makes δίπουν a differentia of both πεζόν and πτηνόν neither of which is classified under the other but both under ζῷον When Aristotle here says that πεζόν and πτηνόν are genera of both of which δίπουν is the differentia, though πεζόν and πτηνόν are not subaltern one to the other but both to ζῷον, he presumes the division found in Διαιρέσεις Ἀριστοτέλους, § 64 (*Aristoteles Pseudepigraphus,* pp 693-694) where the species of θνητὰ ζῷα are πτηνά, ἔνυδρα, πεζά (cf *Timaeus* 39 E 40 A where the "sub-generic" ideas included in ὃ ἔστιν ζῷον are 1] οὐράνιον θεῶν γένος, 2] πτηνόν, 3] ἔνυδρον, 4] πεζόν).

theory to which Aristotle frequently refers (*Topics* 134 A 34, 145 A 30-31, 136 B 10-14, 138 B 1-5); that this was in fact an Academic doctrine appears from the Διαιρέσεις Ἀριστοτέλους, where in § 2 φρόνησις is one of the four virtues and it alone is the virtue of the λογιστικόν, in other words it alone of the virtues is knowledge. The last two passages cited from the *Topics* prove by their mention of sobriety and its seat in the soul as well as of insight that this is the doctrine to which Aristotle is referring; in that case, Academic though it is, it cannot be Xenocratean, for it works with a tripartite soul whereas Xenocrates admitted only two divisions (Heinze, *Xenokrates, frag.* 70 and pp 142-143). As for the genus ἕξις under which both virtue and knowledge are here subsumed, it should be noted that, although in the *Ethics* in arguing against Plato Aristotle distinguishes justice as a ἕξις from knowledge and potency (*Eth. Nic.* 1129 A 11-17; cf Burnet, *ad loc.*), ἐπιστήμη and ἀρεταί are frequently given as examples of ἕξις (cf. *Index Aristotelicus* 261 A 13 ff. and Rodier, *Traité de l'Ame*, II, pp. 168-169).

The attempt of the historian of philosophy to disentangle these various doctrines and to assign them to their proper sources tends to obscure the significance of their confusion in passages such as this one The *Topics* is not concerned with the presentation of philosophical theses in their historically correct form or even with the refutation of any particular philosophical doctrine; it is a list of practical rules for attack, parry, and counter-attack in the dialectical fence of which the sole objective is to force one's opponent into contradictory statements and to avoid being driven into such a position oneself (*Topics* 100 A 18-21; 105 B 30-31). The purpose of the method justifies any treatment of the thesis which may enable the dialectician to discomfit his opponent (*Topics* 159 A 18-24); such procedure, Aristotle believed, if only the debaters are trained in skilful attack and defense and have the proper end in view, is a useful means of serious investigation as well as a form of philosophical exercise (*Topics* 159 A 25-37; cf. H. Maier, *Syllogistik*, II, 2, p. 67, n. 1) Consequently it is not to be taken for granted that Aristotle would always approve on philosophical grounds the results or implications of the particular methods of refutation suggested in the *Topics*; but the practical

nature of the treatise required that he give as examples theses and definitions which his students might in reality have to confront (*Topics* 101 A 30-34; 11 b. ἐκ τῶν οἰκείων δογμάτων ὁμιλήσομεν πρὸς αὐτούς), and the number of Platonic and Academic theses so employed and the methods suggested for their refutation indicate not only the assumption that these students were expected to meet in argument members and followers of the Academy but also that such opponents could be successfully confuted by the development of contradictions not alone with their own special theses but also with the traditional position of Plato. Inasmuch as Aristotle uses this dialectical method in the "preliminary investigations" of his own philosophical treatises, a clear understanding of his attitude toward it at this point will be of service in the later analysis of his treatment of Platonic philosophical doctrine.

From what has been said it will be seen that the discovery of inconsistencies between lines of refutation suggested in the *Topics* and certain of Aristotle's own positions as taken up in his philosophical or scientific works would not justify the conclusion that his own opinions in these matters had undergone alteration between the time of the composition of the *Topics* and that of the other work concerned; rather does such inconsistency emphasize the pedagogical and dialectical purpose for which these examples have been introduced into the *Topics*. The number of references in this treatise to definitions which are either expressly cited as Platonic or capable of being identified as Platonic is, consequently, significant chiefly as an indication that Aristotle expected his audience to find such definitions defended in actual debate, presumably by members of the Academy.

Plato's designation of local motion as translation (φορά, cf. *Theaetetus* 181 C-D, *Parmenides* 138 B-C, *Laws* 893 D) is cited as an example of the error which consists in subordinating genus to species. Not all local change is translation, for this term is practically restricted, Aristotle argues, to involuntary local change such as that of inanimate objects; walking, for example, is not considered to be translation. Consequently the species here has greater extension than the genus. Alexander (*Top.*, p. 316, 15-17) remarked that

Topics 122 B 25-36

in the fifth book of the *Physics* (226 A 32-33) Aristotle himself adopts the designation φορά for local motion; he does so, moreover, with the express acknowledgment that in ordinary speech the word is used in connection with objects that do not have control over their own movement and rest (*ibid.*, 226 A 33-B 1). Furthermore, he not only maintains the usage of this term thereafter (*Physics* 243 A 6-10) but even calls walking a species of translation (*Eth. Nic.* 1174 A 29-31; cf. *De Part. Animal.* 639 A 29-B 3), although in our present passage this form of locomotion is used to show that not all local change is translation[10] In the following topic, which is a method of impugning definitions on the ground that they transgress the rule which requires that the genus be more extensive than the differentia of which it must not partake, Aristotle uses as an example a perversion of the Platonic theory (*Timaeus* 67 D-E) which explained black color as due to the particles of light which coming off the visible object occlude the particles in the stream of vision because they are larger than these White color, on the other hand, results from the penetration of the particles in the stream of vision by the smaller particles of light coming from the object. In Aristotle's language, this theory represents συγκριτικόν and διακριτικόν as the prime differentiae of color; and here as an example of a definition which subsumes the genus under the differentia he pro-

Topics 123 A 1-2

[10] The basis of the other two examples in this topic seems to have been merely a certain looseness of popular usage That contact (ἅψις) is the genus of continuity (συνοχή) and not one of its species Aristotle maintains in the *Physics* (227 A 10-27), but συνεχής and συνέχεια were frequently used in the sense of ἐφεξῆς, "successive" (cf Plato, *Sophist* 261 D E, 262 C; Herodotus, IV, 22; Euripides, *Hippolytus*, 226), which Aristotle makes the genus of contact (*Physics* 227 A 18 19) The rule of the logical priority of the successive (ἐφεξῆς) to contact had already been formulated by Plato (*Parmenides* 148 E). Similarly the words μῖξις and κρᾶσις were used without any necessary distinction of meaning (Plato, *Philebus* 63 E; *Timaeus* 74 C D, cf Theophrastus, *De Sensibus*, 4 [*Doxographi Graeci*, p 499, 23] γίνεσθαι διὰ τῆς κράσεως· ἂν δ' ἰσάζωσι τῇ μίξει . .); Aristotle himself in his discussion of the nature of mixture and "chemical combination" uses τὸ μιχθέν and τὸ κραθέν as synonymous (*De Generatione* 328 A 10-12). Here in the *Topics* he asserts that not all μῖξις is κρᾶσις on the ground that no κρᾶσις results from the μῖξις of dry objects, but his own doctrine as elaborated in the *De Generatione* denies such a thing as a μῖξις of dry objects (328 B 3 and especially 328 B 20-22).

poses "color is the occlusive." The further example, "number is the odd," makes it certain that he expected no one to take these as serious definitions, and the introductory words of the examples for the next sub-topic (*Topics* 123 A 3-4: ἐγχωρεῖ γάρ τινα καὶ τοιαύτην κομίσαι θέσιν) mark them too as fictitious. The significance of these examples lies in the evidence they give for Aristotle's unconcern in this work about the content of the theses which he uses to demonstrate the topical method and for his tendency at the same time to fashion pertinent examples out of Platonic material —the statement of genus as differentia is exemplified by the thesis that local change is the differentia of translation (*Topics* 123 A 4-5), simply a rearrangement of the Platonic definition to which he had previously objected [17].

Topics 126 A 26-29

Analogous to the argument that the species or differentia has in a proposed definition been given greater extension than the genus is the charge that the part has been predicated of the whole, and an example of a definition liable to this attack is that according to which animal is "animate body" (σῶμα ἔμψυχον, cf. for this definition

[17] The Platonic definition of color is correctly given at *Topics* 107 B 29-30 and that of white at *Topics* 119 A 30, in neither case is the definition itself the object of the criticism. At *Topics* 149 A 38 B 3, where Aristotle requires an example of the transgression of the rule that when the object defined is a reality the conditions of the definition must be real, a definition of white is given which appears to be a fiction suggested by the exposition of color in the *Timaeus*. If one were to define white as "color mixed with fire," Aristotle says, the rule would be broken, for white exists but it is impossible for an immaterial thing (i.e. color) to be mixed with a material thing (fire). This is in no way related to Plato's definition of white or even to the doctrine of Empedocles that white is connected with fire and black with water (Theophrastus, *De Sensibus*, §§ 7 and 59 [*Doxographi Graeci*, pp. 500, 25-29, 516, 9-11]), but Plato's account of λαμπρόν or στίλβον with its peculiar combination of the elements of whiteness and fire (*Timaeus* 67 E 5-68 B 1, note Theophrastus' designation of it as τὸ πυρῶδες λευκόν, *De Sensibus*, § 86 [*Doxographi Graeci*, p. 525, 23]) may have supplied the motive for Aristotle's strange combination. At any rate he uses one form of the argument here suggested against the Platonic theory of vision when he objects that the union of light with light (cf. *Timaeus* 45 C) is meaningless, οὐ γὰρ τῷ τυχόντι συμφύεται τὸ τυχόν (*Parva Naturalia* 438 A 29-B 1).

In *Topics* 146 A 21-32 Aristotle gives together as examples of a definition rendered relative to two separate things that of τὸ ὄν as τὸ δυνατὸν παθεῖν ἢ ποιῆσαι (*Sophist* 247 E, cf. *Topics* 139 A 1-8) and that of τὸ καλόν as τὸ δι' ὄψεως ἢ τὸ δι' ἀκοῆς ἡδύ (*Hippias Major* 298 A).

Plato, *Sophist* 246 E, *Politicus* 261 B-D, 288 E 1), a designation, Aristotle says, which makes body the genus of that of which it is really a part. Nevertheless, in the scientific works Aristotle uses the definition here impugned (*De Anima* 434 B 11-12; *De Gen. Animal.* 738 B 19-20), whereas elsewhere in the *Topics* he treats "animate body" as a convertible predicate and proprium of animal (*Topics* 135 A 14-19, 137 B 13; cf. *Metaphysics* 1035 B 15: τοῦτο [*scil.* ψυχή] γὰρ οὐσία τοῦ ἐμψύχου and Plato, *Laws* 959 A-B)

Topics 127 A 2-19

Many of the examples of theses against which the various topics are recommended as serviceable weapons recall the phraseology of the Platonic dialogues, although frequently these definitions are strung together with Presocratic doctrines and popular opinions. One must, for example, object to statements which make the subject of an affection the genus of that affection; such are the definitions of wind as "air in motion" (cf. *Cratylus* 410 B), of snow as "frozen water" (*Timaeus* 59 E), of mud as "earth mixed with moisture" (*Theaetetus* 147 C), and Empedocles' definition of wine Nevertheless, Aristotle admits that such definitions may sometimes be correct; the value of the topic is diminished by the remark that in cases such as these only those definitions are to be accepted in which the asserted genus is the *proper* genus (cf. *Crit. Pres. Phil.*, p. 246, n. 118). Since the genus as the material to be specified is itself the same with or without the affection (so that, if the above definition of wind were correct, there would be wind even without motion of the air), the determining factor to Aristotle's mind in the correct attribution of the genus is really whether or not the material substrate remains unaltered. Conversely, terms defined as affections of certain subjects can be shown not to inhere in these subjects as their substrates, and so the definition is overthrown. Sleep, for example, cannot be debility of sensation, for sleep does not inhere in sensation. Strictly, of course, it inheres in the *organ* of sensation (*Parva Naturalia* 454 B 9-11, 455 A 25-B 13, 458 A 28-32); but Aristotle himself uses the looser phraseology even in his serious treatise on sleep (*Parva Naturalia* 454 B 25-26: τῆς δ' αἰσθήσεως τρόπον τινὰ τὴν μὲν ἀκινησίαν . . . τὸν ὕπνον εἶναι φαμεν.

Topics 145 A 33-B 20

Cf. *ibid.* 455 B 5: ἀδυναμία γὰρ αἰσθήσεων ἡ λιποψυχία). On the same score he criticizes the designation of pain as "the forceful separation of connate parts" (*Timaeus* 64 D-E, 81 D; *Philebus* 31 D) and of health as "the symmetry of hot and cold" (cf *Timaeus* 82 A-B, Aëtius, V, 30, 1 [Alcmaeon]); such definitions would require that inanimate objects experience pain and have health. Moreover, they confuse cause and effect, for the separation of connate parts is not pain itself but the cause of pain and the debility of sensation is not sleep but one of these is the cause of the other. In *Topics* 139 B 19-23 this same definition of health is attacked on the ground of obscurity, συμμετρία being an ambiguous word.[18] In *Physics* 246 B 4-6, however, Aristotle, in arguing that the virtues belong in the category of relation, says that health consists in the symmetry of hot and cold but, instead of using the single word, writes

[18] For this topic of "obscurity" the other example given is the definition, ἡ γένεσις ἀγωγὴ εἰς οὐσίαν, in which ἀγωγή, Aristotle says, is ambiguous The Pseudo-Platonic *Definitions* (411 A) define γένεσις as κίνησις εἰς οὐσίαν, . . πόρευσις εἰς τὸ εἶναι. Cf Plato, *Sophist* 219 B πᾶν ὅπερ ἂν μὴ πρότερόν τις ὂν ὕστερον εἰς οὐσίαν ἄγῃ, τὸν μὲν ἄγοντα ποιεῖν, τὸ δὲ ἀγόμενον ποιεῖσθαί πού φαμεν This topic is followed by an objection to the use of metaphor of which three examples are given (*Topics* 139 B 32-140 A 2). Of these the application of the predicate "immutable" (ἀμετάπτωτον) to knowledge was Academic (Pseudo-Platonic *Definitions* 414 B ἐπιστήμη ὑπόληψις ψυχῆς ἀμετάπτωτος ὑπὸ λόγου . ., cf. *Cratylus* 440 A-B, *Timaeus* 29 B-C) and so was the designation "concord" (συμφωνία) for sobriety (Pseudo-Platonic *Definitions* 411 E σωφροσύνη . συμφωνία ψυχῆς πρὸς τὸ ἄρχειν καὶ ἄρχεσθαι, cf *Republic* 430 D E, 591 C-D), while the metaphor of "nurse" for the earth, common in Greek literature (e g Antiphon, *Tetralog* III, 1, § 2, Aeschylus, *Septem*, 16, *Choeph*, 66; cf Pindar, *Pyth* I, 20), is frequently used by Plato (*Timaeus* 40 B-C, *Menexenus* 237 E-238 A, *Laws* 958 E) though not with the word τιθήνη which Aristotle gives here That the Pseudo-Platonic *Definitions* represent Academic material to which the *Topics* frequently refer is further confirmed by the illustration of definitions which use the term that is being defined (*Topics* 142 A 34-B 6) The example given, "the sun is the star that appears by day," is found in the *Definitions* 411 A-B, but, besides, when Aristotle says that such false definitions can be detected by substituting the definition for the word, the definition of "day" which he gives (ἡλίου φορὰ ὑπὲρ γῆς) is plainly from the same source as that of these *Definitions* (411 B: ἡμέρα ἡλίου πορεία ἀπ' ἀνατολῶν ἐπὶ δυσμάς) Since the references on either side of this passage are to material which is found in the Διαιρέσεις Ἀριστοτέλους (see note 19 *infra*), the latter document and the *Definitions* can be taken to be complementary evidence for early Academic doctrine

Immediately after the topic on metaphorical terms Aristotle attacks the use of

ἐν κράσει καὶ συμμετρίᾳ. It is of some interest to note that in the pseudo-Aristotelian *Problems* (859 A 10-12) health is defined as the ἰσότης of the hot, cold, dry, and moist. Taken together these two topics imply the doctrine that an affection must inhere in the subject of which it is an affection but the subject as such is not the genus of the resulting complex.

Topics 125 B 4-14

When a relational term is defined the genus must be a relational term of the same class, for some such terms are necessarily in those objects to which they are referred, some may be, and some cannot be. The definition used as an example of those liable to attack on this ground, "memory is the abiding of knowledge," may have been widely and popularly employed, but it is more or less expressly given throughout the Platonic dialogues (*Meno* 98 A, *Theaetetus* 191 D, 194 C-195 A; Alexander refers to the definition of *Philebus* 34 A in his commentary on this passage, *Top.*, p. 343, 28 ff) and is implied in an Academic description of the contrary, "forgetting" (Διαιρέσεις Ἀριστοτέλους, § 59. ἐὰν δὲ λήθη γένηται, καὶ οὕτως ἀποβάλλομεν τὴν ἐπιστήμην, cf. *Philebus* 52 A, *Phaedo* 75 D). Since "abiding" is all in and of that which abides, the "abiding of knowledge" must be in knowledge, so that according to this definition memory would be in knowledge (i. e. would be a state or condition of it) But all memory is in the soul (i e. it is not a state of the object remembered but an activity of the correlate) The objection, too, seems to come from Plato's writings (*Cratylus* 437 B: ἡ μνήμη παντί που μηνύει ὅτι μονή ἐστιν ἐν τῇ ψυχῇ), a further example of one Academic or

unfamiliar words (*Topics* 140 A 3 5) and gives three examples which he attributes to Plato ὀφρυόσκιος applied to 'eye," σηψιδακές to "spider," ὀστεογενές to "marrow" The words do not occur in our texts of Plato and they look like the inventions of a poet; it has been suggested that the Plato meant is not the philosopher but the writer of comedies The first two examples offer no real test, but the last could not possibly have come from Plato the philosopher, for it implies the very opposite of one of his doctrines The nature of "marrow" was of special importance for Plato's biology (*Timaeus* 73 B ff, 77 D, 84 C, 91 A ff), and instead of making it 'born of bone" he describes bone as made of marrow (*Timaeus* 73 E), a theory which the *Definitions* (411 C ὀστοῦν μυελὸς ὑπὸ θερμοῦ παγείς) show to have been formalized in the Academy Consequently we are forced, I think, to take this Plato as the comic poet, to whom Aristotle does refer without a distinguishing epithet in the *Rhetoric* (1376 A 10)

Platonic statement used against another. The topic, Aristotle says, is applicable to the attribution of an accident as well, for the same argument holds no matter how memory be asserted to be an "abiding of knowledge" For Aristotle himself, however, the persistence of sense-impressions is the material cause, at least, of memory, although he does not give this as a formal definition and does not make "abiding" itself the genus (*Anal. Post.* 99 B 36-100 A 6).[19] A similar topic is provided by the distinction between state and activity: the genus of a state must be a state, of an activity an activity. So the definition of sensation as "movement through the body" (*Theaetetus* 186 B-C; *Philebus* 34 A; *Timaeus* 43 C, 64 D-65 A, cf Pseudo-Platonic *Definitions* 414 C) is wrong, for sensation is a state whereas motion is an activity. The definition of memory as a "state retentive of conception" (cf Pseudo-Platonic *Definitions* 414 A *Μνήμη διάθεσις ψυχῆς φυλακτικὴ τῆς ἐν αὐτῇ ὑπαρχούσης ἀληθείας*) is liable to the same objection, since memory is rather activity than state. For Aristotle himself, however, sensation is activity and consists in motion in a sense (*De Anima* 416 B 32-418 A 6), while in his own definition of memory he makes the genus *ἕξις*, not *ἐνέργεια* (*Parva Naturalia* 451 A 15-17)

Topics 125 B 15-19

The example of the misuse of the notion of privation in

[19] The whole series of topics dealing with relational terms (*Topics* 124 B 15-125 B 14) is concerned with Academic doctrine E Hambruch (*Logische Regeln*, p 11 with note 2) has pointed to the class of *ἅμα φύσει* in the *Διαιρέσεις Ἀριστοτέλους*, § 66 (*Aristoteles Pseudepigraphus*, p 694, 35 ff) as the Academic basis of *Topics* 124 B 24-26 and 142 A 27 ff In *Topics* 142 B 8-10 the coordinated species of a genus or the differentiae are so styled, and Hambruch considers this the simple consequence of the "Academic doctrine of the priority of the genus to the species", but see pages 43 48, 264-265 and note 174 *infra* The example of coordinate differentiae in 142 B 8-10, however, seems rather to be directed *against* the Academy, for in the *Διαιρέσεις Ἀριστοτέλους*, § 65 the monad is said to be naturally prior to the dyad and according to Speusippus (*frag* 4, line 24, Lang), *πρότερος ἀεί ἐστιν ὁ περιττὸς τοῦ ἀρτίου* The definition which Aristotle attacks, moreover, *περιττὸν τὸ μονάδι μεῖζον ἀρτίου*, is certainly fashioned on the statement in *Phaedo* 105 C *οὐδ' ᾧ ἂν ἀριθμῷ τί ἐγγένηται περιττὸς ἔσται, οὐκ ἐρῶ ᾧ ἂν περιττότης, ἀλλ' ᾧ ἂν μονάς* For Plato's remarks on the nature of relative terms see *Republic* 438 B-E and the passages cited by Shorey in his notes *ad loc.*, *Plato's Republic* (Loeb Classical Library), vol. I, pp. 390-394

definition apparently refers to Plato also. Those who do not use the word ἄγνοια in a merely negative sense, Aristotle says, appear to define by privation a term not meant as privative. (The two senses of the word are contrasted in *Anal. Post.* 79 B 23-24 where ἄγνοια κατ' ἀπόφασιν is the term for complete negation of knowledge and ἄγνοια κατὰ διάθεσιν is a state of mind, i. e. positive error; cf. *ibid.* 77 B 24-26.) It is not that which does not have knowledge but that which has been deceived that "fails to know" (ἀγνοεῖν), so that ἄγνοια is not used by way of mere privation of knowledge. In the *Republic* 585 B Plato calls ἄγνοια a κενότης τῆς περὶ ψυχὴν ἕξεως; but Aristotle seems to have in mind here rather the passage (*Theaetetus* 199 D) in which Socrates describes the shortcomings of the figure of the aviary which had been invented to explain the genesis of error. There the argument purposely proceeds from the use of this word in the sense of "mistake" (199 D 2, τοῦτο αὐτὸ ἀγνοεῖν) by means of the ambiguous usage (199 D 5, ἀγνοῆσαι πάντα) to the sense of "complete ignorance" (199 D 6, ἄγνοιαν . . . γνῶναί τι ποιῆσαι).

Topics 148 A 3-9

It does not concern our present purpose to identify the many reminiscences of the Platonic dialogues and Academic doctrines which abound in the *Topics*, although it would be profitable to analyze exhaustively the indications which here and elsewhere in the Aristotelian corpus are thus provided for the origin of Aristotle's own doctrines. Here a few examples will suffice. When Aristotle introduces the thesis, "knowledge is essentially sensation," to exemplify the kind of statement against which one can use the topic that the opposite of the genus must be the genus of the opposite species (*Topics* 125 A 25-32), the suspicion that he is thinking of such arguments as that of the *Theaetetus* is confirmed by comparison with *Topics* 114 A 20-23 (οὐ μὴν ἀληθής γε ἡ ἔνστασις δοκεῖ εἶναι· πολλοὶ γὰρ οὔ φασι τῶν αἰσθητῶν ἐπιστήμην εἶναι, cf. *Theaetetus* 185-186). So, too, the objection that "object of opinion" may be predicated of "that which is not," so that "being" or "object of knowledge" cannot be the genus of "object of opinion" (*Topics* 121 A 20-26. the genus must be predicated of that of which the species is predicated) recalls the *Theaetetus* (167 A, 188 D) and the *Sophist* (240 D ff., 260 B ff.); and the thesis that of contraries

the knowledge is one, a thesis used widely as an example (*Topics* 105 B 33-34, 109 B 17 ff, 155 B 30 ff, 163 A 2 ff, cf. *Anal. Prior.* 24 A 21, 48 B 5, 69 B 9 ff., *Physics* 251 A 30), is a doctrine to which Aristotle himself subscribes (*Metaphysics* 1046 B 4-24, 1061 A 18 ff.) but which is Platonic (*Hippias Minor* 366 A-368 A, *Republic* 333 E-334 A, *Politicus* 298 A-B, *Laws* 816 D-E) and to the use of which in the Academy Aristotle seems to refer in the *Topics* (142 A 24-25, cf. also *Metaphysics* 1078 B 25-27 with 987 B 31-33).

The nature of the *Topics* precludes any discussion of the method of diaeresis as such just as it does any direct consideration of the theory of ideas, but the use of this method is frequently mentioned in a way which shows that familiarity with it on the part of the audience was taken for granted,[20] while the basic terminology and the rules for the interrelations of terms indicate that a highly systematized doctrine of diaeresis was the foundation of the treatise. The attack upon division of the genus by negation (*Topics* 143 B 11-32; see pages 5 ff. *supra*) is in this connection significant, for it is expressly limited to use against those who make the genus numerically one, it is not an argument against diaeresis or even against dichotomy by negation but rather an attempt to show that those who posit transcendental genera thereby deprive themselves of their own method of defining by diaeresis (cf. the expanded implication of the objection, *Topics* 143 B 35-144 A 4).

Of the two passages devoted to criticism of the method of

[20] The topic of inspection in cases of universal predication (*Topics* 109 B 13-29) employs phraseology which is reminiscent of the *Philebus*, cf *σκοπειν δὲ κατ' εἶδη καὶ μὴ ἐν τοῖς ἀπείροις . . δεῖ δὲ σκοπεῖν καὶ ἄρχεσθαι ἀπὸ τῶν πρώτων, εἶτ' ἐφεξῆς ἕως τῶν ἀτόμων . . πάλιν ταῦτα διαιρετέον μέχρι τῶν ἀτόμων* with *Philebus* 16 C ff.. *δεῖν οὖν ἡμᾶς . ἀεὶ μίαν ἰδέαν . . ζητεῖν . ἐὰν οὖν μεταλάβωμεν, μετὰ μίαν δύο, εἴ πως εἰσί, σκοπεῖν, εἰ δὲ μή, τρεῖς ἢ τινα ἄλλον ἀριθμόν, καὶ τῶν ἓν ἑκείνων ἕκαστον πάλιν ὡσαύτως, μέχριπερ ἂν τὸ κατ' ἀρχὰς ἓν μὴ ὅτι ἓν καὶ πολλὰ καὶ ἄπειρά ἐστι μόνον ἴδῃ τις, ἀλλὰ καὶ ὁπόσα τὴν δὲ τοῦ ἀπείρου ἰδέαν πρὸς τὸ πλῆθος μὴ προσφέρειν πρὶν ἂν τις τὸν ἀριθμὸν αὐτοῦ πάντα κατίδῃ τὸν μεταξὺ τοῦ ἀπείρου τε καὶ τοῦ ἑνός* and *ibid* 18 A *οὐκ ἐπ' ἀπείρου φύσιν δεῖ βλέπειν εὐθὺς ἀλλ' ἐπί τινα ἀριθμόν* The use of this method for testing definitions is expressly recommended in *Topics* 111 A 33-B 11, 120 A 34-B 6 (see page 12 *supra*), 121 A 27-39 (for the example, "movement is the genus of pleasure," cf *Republic* 583 E), 132 A 27-B 3.

division as such the first occurs at the point where Aristotle has completed his treatment of the three figures of the syllogism and of the means for discovering premises for these figures. The opening words of his criticism indicate that he is eager to prevent any connection of his method of demonstration with the method of diaeresis, although the form of expression leaves the way open for his subsequent admission of a certain usefulness of diaeresis in the preliminary matter of discovering definitions. It should be noted that there is here no suggestion of different theories or applications of the method of diaeresis and that all who used it are criticized on the assumption that they held the procedure to be a method of proof. Division by kinds, he says, is obviously but a small part of the method that has been described, for division is, at it were, a feeble syllogism, inasmuch as it postulates what it has to prove and establishes as predicate a term that is higher (i e. more universal; cf. *Anal. Post.* 82 A 23-24) than the determinative predicate. This error was not noticed by any of those who employed the method; and they undertook to argue on the assumption that it is possible to give a demonstration of substance and essential nature, with the result that they went on making divisions without understanding what can be proved syllogistically or that it was possible to construct a proof by the syllogistic method just outlined.[21] Although there are here two fundamentally different objections to the method of diaeresis, the rest of the chapter consists chiefly of arguments in support of the contention that the method transgresses the laws of logical thought; the other criticism is

Anal. Prior. 46 A 31-B 37

[21] In *Anal. Prior.* 46 A 37-38 the reading of the MSS, ὥστ' οὔτε ὅ τι ἐνδέχεται συλλογίσασθαι διαιρούμενοι ξυνίεσαν, should be retained against Waitz's ὅτι . . διαιρουμένους, for Aristotle makes two distinct charges against those who used diaeresis 1) they did not know what was and what was not susceptible of demonstration, and 2) they were ignorant of the proper method of demonstrating what is demonstrable H Maier (*Syllogistik*, II, 2, p 70, n 2) interprets the sentence in the same way while reading διαιρουμένους; but this is impossible, for that reading would make the clause mean that there are some things which can be proved syllogistically by diaeresis, a notion which is in contradiction to the whole chapter (N b ἐνεδέχετο, 46 A 38, is a "philosophical imperfect". it was, even while they were unaware of it, possible etc , Maier, *loc. cit.*, is wrong in saying "das Imperf. erklärt sich aus dem εἰρήκαμεν.")

not pressed in its original form but is altered in a significant fashion and treated more briefly. In the demonstration of a positive conclusion (in the first figure), Aristotle says, although the middle term must be less extensive than the major of which it must not be universally predicable, diaeresis takes the universal as middle term. If, for example, the concept "man" is to be ascertained, those who follow this method assume that "every animal is mortal or immortal" (all A is B or C) and then by division posit that "man is an animal" (all D is A) The necessary conclusion should be that "man is mortal or immortal," not that "man is a mortal animal," which merely begs what was to have been proved. This, however, is the process followed at each step of the division in which the universal term (e. g. animal = A) is taken as the middle while the subject of the demonstration (man = D) and the differentiae (*either* mortal *or* immortal = B *or* C) are taken as the extremes. Every step of the diaeresis repeats this process, so that the predicate of the conclusion is strictly always an alternative (*either* B *or* C) and so more universal than the determinative predicate; the desired term must then be begged (46 B 11 and 19) So the two parts of the first objection are proved; but the second objection is supported by only one sentence (46 B 22-24) It had been clearly indicated that περὶ οὐσίας ἀπόδειξις καὶ τοῦ τί ἐστιν is impossible; at this point, however, instead of introducing an argument to prove that there can be no demonstration of the essential nature, Aristotle merely says that those who use diaeresis give no unequivocal indication that the result attained by their method must necessarily express the essence of the *definiendum*.[22] To this objection he adds as explanation only the general remark that they use their own method exclusively throughout their reasoning without even suspecting the existence of the means at their disposal The position of this vague

[22] For the meaning of σαφές in οὐδὲν λέγουσι σαφές, ὥστ' ἀναγκαῖον εἶναι (46 B 23-24) see *Anal Post* 97 B 31 ff — ὥσπερ δὲ ἐν ταῖς ἀποδείξεσι δεῖ τὸ γε συλλελογίσθαι ὑπάρχειν, οὕτω καὶ ἐν τοῖς ὅροις τὸ σαφές (cf *Topics* 131 A 34-37, *Meteorology* 357 A 24 ff) and the description of the perfect figure in *Anal. Prior* 24 B 22 24 (πρὸς τὸ φανῆναι τὸ ἀναγκαῖον). H Maier (*Syllogistik*, II, 2, p 72, n 3) properly points to *Anal Post* 91 B 23-27 as the pertinent commentary on the present objection.

statement might seem to imply that with the proper method a definition can be demonstrated, an implication which the beginning of the chapter denies. The sentence can refer, then, only to the failure to demonstrate what is really demonstrable and does not mean to give the special reason why the supposed demonstration of definitions by dichotomy is unsound. The development of that reason would involve the argument that demonstration of the definition is impossible by any method, a subject which is not proper to this place where Aristotle is concerned only to show the deficiencies of diaeresis as compared with the syllogistic method that he has just explained.[28] The purpose of the criticism here is summed up at the end of the chapter (46 B 26-37) which, Aristotle says, has made it clear that by this method it is impossible to construct a refutation or to draw a conclusion about an accident, a property, or a genus (cf. *Topics* 101 B 17-25 and note that in the résumé here the charge that diaeresis cannot demonstrate a definition is not mentioned); in cases where the term of the alternative predicate to be chosen is not previously known diaeresis can lead to no conclusion at all, for it can conclude only that the diagonal, for example, is either commensurable or incommensurable but to go further must beg the question in choosing one of the alternatives. Consequently, this method can furnish no proof and is useless not only for investigation in general but even for this kind of problem to which it is supposed to be most appropriate. The position of this polemic directly following the general doctrine of the syllogistic method and preceding the rules of practical application, the fact that Aristotle thought it necessary after having outlined his own system of logical proof to refute the pretensions of the method of diaeresis and that method alone, indicates that the latter was the only systematic "logic"

[28] The ἐνδεχόμεναι εὐπορίαι (46 B 25) are the syllogistic methods of proof (cf. for εὐπορία in the sense of a method or theory which resolves a difficulty *Metaphysics* 995 A 28 ff., *De Caelo* 291 B 24-28) as contrasted with diaeresis, which, while useless for demonstration, has some utility in the process of acquiring premises (*Anal. Post* 96 B 25-97 A 6, cf. 96 B 30 35 with *Anal. Prior.* 43 B 1-5, 16-32 and F. Solmsen, *Die Entwicklung*, p. 189: "Die Welt der aristotelischen Begriffe dankt ihre Ordnung ausschliesslich jener platonischen Methode"). As such it is μικρόν τι μόριον τῆς εἰρημένης μεθόδου (46 A 31-32).

with which at this time the field had to be disputed (cf. F. Solmsen, *Die Entwicklung*, p 181, n 2); but the fact that the syllogistic as a complete method is opposed to that of diaeresis, that the shortcomings of the latter are not discussed at the beginning of the *Prior Analytics* and used to develop ἀπορίαι out of which Aristotle's own method would then be constructed, although the problem of proof through the middle term would have furnished a means for this common Aristotelian procedure, shows further that Aristotle did not recognize the method of diaeresis as the origin of the syllogism [24]

The second extensive criticism of diaeresis occurs in Aristotle's discussion of the possibility of demonstrating a definition (*Anal. Post.* 90 A 35-94 A 9). He first shows that, since one and the same thing cannot be the object of both definition and demonstration, these two processes can neither be the same nor be included one in the other (II, chap. 3, 91 A 7-11) and that the syllogism cannot furnish a definition of essential nature because the essential nature would have to appear in the middle term and so the conclusion would be a *petitio* (II, chap 4). In proceeding, then, to show that diaeresis cannot demonstrate the definition he is not able to argue that that method is less efficient than syllogistic but only that, contrary to the belief of its practitioners, it has no advantage over the syllogism in this matter.

Anal. Post 91 B 12-92 A 5

[24] H. Maier (*Syllogistik*, II, 2, pp 75 ff) sought to find the origin of the syllogism in the critical analysis of diaeresis and, therefore, was forced to assume that *Anal. Prior.* I, chap 31 was a later addition to the treatise (*op cit*, II, 2, p 77, n 2) His notion that the chapter "sitzt ziemlich lose zwischen zwei Abschnitten" is an example of "wishful thinking" (see the analysis above and especially the previous note) Solmsen (*Die Entwicklung*, p 182) says only "Wir wissen nicht in welche Zeit jene Kritik an der διαίρεσις, die wir An Pr A 31 lesen, zurückreicht, auch nicht, welche Ablehnung jener Methode zugrunde liegt, wenn Aristoteles im ersten Buch der Topik konstatiert, es gabe zwei Arten dialektischer λόγοι συλλογισμός und ἐπαγωγή (Top A 12), mithin die διαίρεσις ignoriert." Paul Shorey (*Class Phil*, XIX [1924], pp 1 ff [cf *Class Phil.*, XXVIII, 1933, pp. 199 ff]) has argued convincingly against Maier's thesis that *Anal. Prior* I, chap 31 was added after the completion of *Anal Post* II, he contends successfully, I think, that the syllogism was not suggested by διαίρεσις but represents the development of an entirely different principle of Plato's thought (cf. *Phaedo* 100 C-105 B). Shorey's contention has recently been approved and adopted by Ross (*Philos. Rev.*, XLVIII [1939], pp 270-2).

In such a case it is natural that the general deficiencies of the method of diaeresis should be exploited, and Aristotle begins with a reference to his proof in the *Prior Analytics* that diaeresis does not demonstrate at all, for its conclusion is not a *necessary* consequent of the given facts (the characteristic of syllogistic proof, cf *Anal. Prior.* 24 B 18-20), in this respect it is no better than induction. He stresses the "dialectical" character of the method by objecting that at each step the attribution of the new predicate depends upon the answer of the respondent who may or may not grant the assumption (for each step is an assumption of the desired alternative rather than a demonstration), whereas a conclusion must have objective validity whether or not the respondent accedes to it (cf *Topics* 158 A 7-13). The same lack of stringency characterizes the definition so obtained (this is more explicitly the objection of *Anal. Prior.* 46 B 22-24), since that the complex of attributes which results should be the essential nature is a further assumption;[25] for it might well be true that these are all attributes of the subject without indicating its nature or form, and there is no assurance that the process has not gone too far or stopped short of some essential or omitted some necessary interval.

The practitioners of diaeresis had urged, however, that these technical difficulties could be avoided by a proper use of the method, by taking into account all the essential characteristics, postulating the primary genus and making the division a continuous series of terms without any lacuna. These conditions will necessarily be fulfilled if the division completely exhausts the genus and if the process does not stop short of its goal; and this, in turn, is guaranteed by the fact that the object of definition must be finally indivisible.[26] Even so, Aristotle argues,

[25] The sentence at 91 B 23-24 is a parenthesis (so G R G Mure in the *Oxford Translation*). Aristotle's criticism of the finished definition is thus far the same as that of every step of every diaeresis it is a *petitio* rather than a demonstration He here interjects that even the objects which admit demonstration are by those who use diaeresis subjected to a treatment which lacks demonstrative validity

[26] I read Bekker's text The champions of diaeresis argue that the continuity of the series and the inclusion of all essential characteristics are assured by 1) exhaustive division and 2) completion of the process and that the latter can be recognized by 3) the appearance of an indivisible species This interpretation is supported by *Anal Post.* 97 A 14-22 *ὅταν λάβῃ τἀντικείμενα καὶ τὴν διαφορὰν*

there is no demonstration involved To be sure, the process may furnish knowledge, even though it proves nothing, just as induction reveals without demonstrating (cf *Anal. Prior.* 68 B 30-37, *Anal. Post.* 71 A 5-9, 81 A 40-B 9; *Topics* 105 A 11-19); but to draw a definition from diaeresis is not to give any demonstration, for just as in the case of conclusions drawn without middle terms the reason for the attribution is always open to question Moreover, such a string of attributions does not make a definition, so that even if there were proof by diaeresis it would still not be a definition that was demonstrated.

The conclusion of this criticism is, then, that diaeresis results neither in demonstration nor in definition, although it may in some other fashion produce knowledge There are certain other methods of demonstrating definitions, however, which in this connection require Aristotle's refutation. In arguing that a syllogism which seeks to demonstrate essential nature is necessarily a *petitio* he uses as an example the method of proof by conversion and implies that this was the fashion in which Xenocrates sought to establish his definition of the soul To reason, he says, for example, that the soul is that which is the cause of its own life and that this is a self-moving number can lead to the conclusion of essential nature only if one postulates that the soul and self-moving number are identical If this be done, the argument is a *petitio*; if not, one gets at best a true predicate, not a definition.[27]

***Anal. Post.* 91 A 35-B 11**

καὶ ὅτι πᾶν ἐμπίπτει ἐνταῦθα ἢ ἐνταῦθα φανερὸν γὰρ ὅτι ἂν οὕτω βαδίζων ἔλθῃ εἰς ταῦτα ὧν μηκέτι ἐστὶ διαφορά, ἕξει τὸν λόγον τῆς οὐσίας These three parts of the method are mentioned more or less explicitly in Plato's dialogues, e g 1) Exhaustive division, *Sophist* 219 D 1-2, *Politicus* 262 B ff , 2) Completion of the process, *Politicus* 267 C ff. (n b ἢ τοῦτ' αὐτὸ καὶ μάλιστα ἡ ζήτησις ἐλλείπει . .), 3) The indivisible species as end of the process, *Sophist* 229 D, *Philebus* 16 D-E

[27] Zeller (*Phil. Griech*, II, 1, pp 1020 21) expressed doubt that this proof was really used by Xenocrates, but the argument quoted from him in *Topics* 152 A 5-30 (see page 14 *supra*) involving the identity of the virtuous and the happy lives is cast in the same mold, for in this fashion the essential nature of happiness was to be shown to be virtue Aristotle objects to that argument that so long as each of the two things to which the superlative term is applied is not one and single there is no justification for identifying them, rather is the inclusion of the one set in the other thereby indicated Taken together these passages testify to a wide use of this form of proof. Hambruch (*Logische*

This criticism, employed also against the claim of diaeresis to be a *demonstration* of definition (cf. 91 B 24-26 with 91 B 1-4), that what is to be proved to be essential nature is necessarily assumed to be such in the middle, is the cardinal point in the refutation of two further methods. The first of these consists in drawing the conclusion that such and such is the definition of a thing from assumptions, one of which states that the form or definition of anything consists of the characteristics peculiar to its essence and the other of which asserts that such and such are the sole essential characteristics the combination of which is peculiar to a particular subject. Here, too, the middle term which should be the instrument of the demonstration already asserts that such and such is the form. Moreover, the definition of form must not be included in the demonstration of the particular form any more than the definition of syllogistic reasoning is in a particular syllogism; such definitions are canons which lie outside of the particular premises and are used only to test the validity of the finished processes (cf. H. W. B. Joseph, *An Introduction to Logic*,[2] pp. 311-313). The two assumptions which Aristotle here says cannot be used to produce a syllogistic demonstration of the definition are just the tacit assumptions of diaeresis. In the *Topics* (153 A 15-22, cf 154 A 23-32) they are the conditions which make it possible to establish and defend a definition;[28] they form the canon according to which

Anal. Post. 92 A 6 19

Regeln, pp 22 ff) refers it to the μέθοδος θεωρητική of § 37 of the Διαιρέσεις Ἀριστοτέλους and cites as an example of the same method the use of the conversion of ὄνομα and λόγος in Plato's *Laws* 895 D ff

[28] H Maier (*Syllogistik*, II, 2, p 78, n 3 [pp 79-80]) asserts with reference to these passages: " In Topik VII wird unbefangen und ohne Einschränkung die Beweisbarkeit der Definition gelehrt." In short, Maier believes that between the time of the composition of this part of the *Topics* and that of the refutation in *Posterior Analytics* Aristotle changed from the belief that definition could be demonstrated to the conviction that this is impossible This interpretation of the relationship of the two passages is accepted as correct by F Solmsen (*Die Entwicklung*, pp 181 f), but even the strongest statements in the *Topics* (153 A 14 λεκτέον ὅτι δυνατὸν γενέσθαι ὁρισμοῦ καὶ τοῦ τί ἦν εἶναι συλλογισμόν; 153 A 23: ἐγχωρεῖ συλλογισμὸν ὅρου γενέσθαι) do not prove that Aristotle believed it possible really to demonstrate a definition In the first place, 153 A 14 within its context has quite a different tone To explain accurately τί ἐστιν ὅρος καὶ πῶς ὁρίζεσθαι δεῖ, Aristotle says, is the business of another discipline; here

Aristotle himself in the *Posterior Analytics* establishes the validity of diaeresis as a method for arriving at definitions (*Anal. Post.* 97 A 23-B 6, cf 96 B 1-14), and it was because the practitioners of diaeresis considered that these conditions could be fulfilled by a proper use of the method that they were represented as believing that definitions so obtained had been logically demonstrated (*Anal. Post.* 91 B 28-32, cf 97 A 11-22 [Aristotle's own defense of the method as a means of obtaining the λόγος τῆς οὐσίας]). How explicitly exponents of the method may have asserted that it demonstrated as well as discovered definitions cannot be said; but, while certainly no one of them had suggested such a syllogistic formulation for demonstration as is implied by *Anal. Post* 92 A 6-9, it is clear

he will give only so much as will satisfy the needs of the subject in hand ὥστε τοσοῦτον μόνον λεκτέον ὅτι δυνατὸν κτλ The ἄλλης πραγματείας is the first part of *Anal Post* II, but the reference is vague enough to allow the explanation that the doctrine of that treatise had not yet been formulated Nevertheless, this expedient is excluded by the reference twelve lines later (153 A 24-25, ἐκ τίνων δὲ δεῖ κατασκευάζειν, διώρισται μὲν ἐν ἑτέροις ἀκριβέστερον . . .) which is certainly to *Anal Post* II, chap 13 (Maier's attempt to refer it to *Topics* VI was a desperate and unsuccessful manoeuvre to avoid the obvious refutation of his thesis, cf F Solmsen, *Die Entwicklung*, p 151, n 2 [p 152]) and so offers a strong presumption that Aristotle had already drawn the distinction between establishing and demonstrating a definition The phrase συλλογισμὸς ὅρου, which seems superficially to imply that demonstration is meant, is used in the special sense which συλλογισμός bears in this discipline, i e "dialectical syllogism" (cf *Topics* 100 A 18-101 B 4 [n b 100 A 22-24 ὅπως ληφθῇ ὁ διαλεκτικὸς συλλογισμός τοῦτο γὰρ ζητοῦμεν κατὰ τὴν προκειμένην πραγματείαν], 105 A 10-12 [συλλογισμός in the sense of συλλογισμὸς διαλεκτικός]) The possibility of such a συλλογισμὸς ὅρου, as distinguished from a syllogistic demonstration, is expressly admitted in the *Posterior Analytics* (cf *Anal. Post.* 93 A 14-15 [Waitz, *ad loc*] and *Topics* 162 B 27). Moreover, in the *Topics* itself the establishment of a definition in this fashion admittedly depends upon winning the consent of the respondent to certain assumptions (*Topics* 153 A 18-19 φανερὸν ὡς εἴ τις λάβοι κτλ, 154 A 24-32), a requirement which makes the process precarious (154 A 24-28 καὶ γὰρ ἰδεῖν αὐτὸν καὶ λαβεῖν παρὰ τῶν ἐρωτωμένων . οὐκ εὐπετές . . ἄνευ δὲ τούτων ἀδύνατον γενέσθαι συλλογισμόν) and of itself implies that the reasoning is dialectical and not a demonstration (cf *Topics* 158 A 7, 158 A 15 17 ἔστι γὰρ πρότασις διαλεκτικὴ πρὸς ἣν ἔστιν ἀποκρίνασθαι ναὶ ἢ οὔ, *Anal. Post* 91 B 15-17) These assumptions, without which, according to the *Topics*, a proof (even a dialectical proof, that is) of the definition is impossible, are the very assumptions which in *Anal Post* 92 A 7-10 are said to conceal a *petitio* and so to render the demonstration invalid

that the two premises express conditions which were recognized in the Academy as necessary and sufficient for the validity of the process (cf. Pseudo-Platonic *Definitions* 414 D, *s. v.* ὅρος and Διαιρέσεις Ἀριστοτέλους, § 64; Plato, *Theaetetus* 208 D, *Politicus* 285 B). There follows the rejection of the attempt to demonstrate a definition through the definition of a contrary; such a process, like the preceding, begs the question by assuming the definition as a premise. For example, if it be granted that the definition of evil is divisibility (τὸ διαιρετῷ εἶναι) and that for each thing that has a contrary the definition of the contrary is the contrary of its own definition, one might argue that, since the contrary of evil is good and the contrary of divisible indivisible, the essential nature of good is the indivisible. Still, in positing the essential nature of evil one necessarily assumes the essential nature of good, for they are correlative. This type of argument, called technically ἐκ τοῦ ἐναντίου, was used widely in the Academy; it is given with many niceties of application as a means of establishing definitions in *Topics* 153 A 26-B 24 and as a means of overthrowing them in *Topics* 147 A 29-B 25 where there significantly appears (147 B 17-25) the very objection that is raised in the *Posterior Analytics*, namely that in defining by

Anal. Post. 92 A 20-27

Topics VII, chaps 3 and 5 do not, then, assert that syllogistic demonstration of a definition is possible, the stress put upon the necessity of assumption and the respondent's consent rather implies that a strict examination would show such demonstration to be impossible. The fallaciousness of Maier's argument is most patently exhibited by another piece of evidence which he produces "Und ebenso" (he says, *loc cit*, p 80) "richtet sich 92 A 20 ff unmittelbar gegen 153 A 26 ff Damit ergiebt sich, dass jedenfalls die 1. Halfte von Anal Post II spater ist als Top VII" Maier failed to notice, however, that in *Topics* VI (which, according to his theory, is earlier than *Topics* VII, chap 3 [*loc. cit.*, p 82]) Aristotle gives the very same refutation of the method of 153 A 26 ff. as he gives in *Anal. Post* 92 A 20 ff. (cf *Topics* 147 B 17-25). The difference is simply that in the *Topics* this refutation is given as a dialectical means of overthrowing a dialectical syllogism whereas in the *Posterior Analytics* its purpose is to show that such a syllogism, being merely dialectical, cannot truly demonstrate a definition The danger of arguing from the mere word συλλογισμός in *Topics* 153 A 14-24 appears from the fact that after having shown the impossibility of demonstrating a definition and immediately after having recalled the fact that "divisions" do not provide such a demonstration Aristotle can still say χρήσιμοι δ' ἂν εἶεν ὧδε μόνον πρὸς τὸ συλλογίζεσθαι τὸ τί ἐστιν (*Anal. Post.* 96 B 26-28).

this method such terms as good and evil one has to employ the term that was to have been defined. There are to be found examples of its use by Plato (*Gorgias* 475 A), by Xenocrates ([Aristotle], *De Lin. Insec.* 968 A 2-6), and by Aristotle in his dialogue, *Eudemus* (*frag.* 45, p. 50, lines 5-7 [overthrow of a definition] and lines 13-20 [establishment of the definition of ἁρμονία τοῦ σώματος through that of ἀναρμοστία for the purpose of overthrowing the proposed definition of ψυχή]) Most pertinent to the present passage, however, is its employment in the Academic quarrel about the relationship of pleasure and the good. Eudoxus used the method to establish pleasure as the good (*Eth. Nic.* 1172 B 18-20) Speusippus answered him by the same form of argument, saying that ἀντίκειται κακὸν κακῷ καὶ ἄμφω τῷ μηδέτερα and that, while pleasure and pain are opposed as κακὸν κακῷ, the two together have for their contrary the neutral state (*Eth. Nic.* 1173 A 5-9). Aristotle, in turn, uses the same method against Speusippus by specifying the sense of "evil" and arguing, τῷ φευκτῷ τὸ ἐναντίον, ᾗ φευκτόν τε καὶ κακόν, ἀγαθόν. ἀνάγκη οὖν τὴν ἡδονὴν ἀγαθόν τι εἶναι (*Eth. Nic.* 1153 B 3-4, the same at 1173 A 10-13 [n. b. οὕτω δὴ καὶ ἀντίκειται] but more loosely formulated) It is not only the method cited in our passage, however, that is Academic, the designation of evil as διαιρετόν and of good as ἀδιαίρετον can be traced to the same milieu. At *Eth. Nic.* 1173 A 15-17, continuing his argument against the opponents of pleasure, Aristotle says λέγουσι δὲ τὸ μὲν ἀγαθὸν ὡρίσθαι τὴν δὲ ἡδονὴν ἀόριστον εἶναι ὅτι δέχεται τὸ μᾶλλον καὶ τὸ ἧττον. This is reminiscent of the *Philebus* (e. g 27 E-28 A, 31 A, 65 D), but, as Burnet noted (*The Ethics of Aristotle*, pp. 444 f), the word ἀόριστον indicates that he is criticizing a contemporary form of the doctrine, and the information of *Eth. Nic.* 1153 B 5-6 gives further enlightenment. There it appears that Speusippus in his use of the argument from the contrary equated the good with τὸ ἴσον, pleasure and pain with τὸ μεῖζον καὶ ἔλαττον; and the connection between ἴσον and ἀδιαίρετον, on the one hand, between ἀόριστον (i e. τὸ μεῖζον καὶ ἔλαττον) and διαιρετόν, on the other, is completed by Speusippus' statement, ὕσχιστον γὰρ ἀεὶ καὶ ἐνοειδὲς τὸ ἴσον (*frag.* 4, lines 52-53 [Lang, p 56]), and by Aristotle's casual testimony that he applied the term ἀόριστον to

the imperfect (*Metaphysics* 1092 A 13) [20] Thus far the various methods of obtaining a definition have been shown to lack the force of demonstration; all of them are guilty of the same technical error, for all assume somehow the essential nature which they pretend to demonstrate. Now at the end Aristotle brings an additional objection against the method of diaeresis and that which argues ἐξ ὑποθέσεως, an objection at which he had already hinted in the case of diaeresis (*Anal. Post.* 92 A 3-4: ὁ δὲ τοιοῦτος λόγος ἅπας οὐκ ἔστιν ὁρισμός). The essential nature of anything is a genuine unity; but these methods give no reason why the predicates which they obtain must form a unity rather than be merely unconnected attributes of a single subject. The unity of the definition is a recurrent problem in Aristotle's writings (cf. *De Interpretatione* 17 A 13-15, 20 B 15-30, *Metaphysics* 1015 B 16-1017 A 6) of which the only solution given here is the distinction between accidental and essential attribute: the definition is a unified statement in that it reveals one thing of another as not accidentally the predicate of a subject (*Anal. Post.* 93 B 35-37, cf. 96 B 23-24 [τοῖς ἁπλοῖς καθ' αὑτὰ ὑπάρχειν τὰ συμβαίνοντα μόνοις], *Poetics* 1457 A 28-30). This may be a satisfactory "logical" doctrine and sufficient as a practical canon for the combination of terms in a definition (*De Interpretatione* 20 B 31-21 A 33, *Anal. Post.* 96 B 1-14), but the reason for this unity is felt to be a "metaphysical" question (*De Interpretatione* 17 A 13-15) and as such is taken up in the *Metaphysics.* Early in his general consideration of substance Aristotle raises

Anal. Post. 92 A 27-33

[20] The use of many of these terms is also attested for Xenocrates Apparently he applied the term διαίρετος to each of his idea-numbers as well as to elements of the sensible world (*frag* 42, lines 9-18, Heinze) but distinguished in general the ideal world as ἀμέριστον from the phenomenal world as μεριστόν (so, at any rate, Proclus and Simplicius intimate [Xenocrates, *frags* 62 and 64]); the "one" he called ἀμέριστον as opposed to πλῆθος which was μεριστόν (*frag* 68, cf *frag.* 28) He is said to have written treatises περὶ τοῦ ἑνός and περὶ ποῦ · ἀορίστου (Diogenes Laertius, IV, 2, 11).

A notion of Plato's use of such terms (μᾶλλόν τε καὶ ἧττον, ἴσον, μέτρον, πέρας, ἄπειρον) can be gained from *Philebus* 24 B-25 B, and Διαιρέσεις Ἀριστοτέλους, § 68 (cf Mutschmann's text, *Divisiones Aristoteleae,* p 66, lines 3-13) indicates the influence in the Academy of the fashion in which Speusippus applied the doctrine of contrariety to the problem of good and evil Cf. also Hambruch, *Logische Regeln,* pp 13-16.

the question of the unity of definition with a specific reference to the fact that the matter had been left unsettled in the *Analytics* (*Metaphysics* 1037 B 8-14). The elements in the definition must, he says, form a unity, for the definition is a single statement concerning substance and so must have a single object since "substance" indicates a "single particular thing" (1037 B 24-27). The unity of the definition, then, and the unity of the substance defined are identical. The concluding chapter of this discussion (*Metaphysics* H, chap. 6) raises the question of the "cause" of this unity (1045 A 7-14) and resolves it by means of the correlative terms matter—form, potentially—actually. the reason for the unity of the terms "animal" and "biped" in the definition of "man" is simply that one is the form of the other which is the matter In the case of generated things the passage from potentiality to actuality is brought about by the efficient cause, it being the essence of the potential to be actualized and of the actual to have been potentially. Part of every definition, then, is its matter and part is its form (1045 A 23-35) This is the solution of the difficulty encountered by those who assume that "animal" and "biped" exist absolutely (i. e. as ideas); they cannot explain wherein the unity of "man" consists, for they cannot tell why these two ideas themselves do not constitute "man" and why men cannot exist by participation in these two separate ideas without any "idea of man," in which case, however, man would be a plurality rather than a unity (1045 A 14-22). This problem of unity, Aristotle proceeds, has caused people to introduce the notion of participation, although they are at a complete loss to say what the nature of participation and its cause can be (cf. *Crit. Pres. Phil.*, p. 246, n. 118), and all because they are seeking for a formula which will unify potency and actuality whereas the fact is that proximate matter and form are the same, the former being potentially what the latter is actually (1045 B 7-22). This explanation must, of course, be limited to such things as have matter either sensible or intelligible; the *summa genera* such as the categories are by their very essence each a "unity" and a "being" and have no external cause for being so (1045 A 36-B 7).[80]

[80] Stenzel (*Zahl und Gestalt*, pp. 141-142) interprets 1045 B 2 ff. as if it

It has been noted that *Topics* 143 B 11-32 is a method for attacking those who posit transcendental ideas by showing that such an hypothesis destroys the possibility of diaeresis and definition; the foundation of the attack is the incompatibility of transcendental existence and the rôle of genus in diaeresis, and this topic by its connection with *Metaphysics* Z, chaps 12-14 was shown to imply the doctrine that the genus is the matter of the definition. Similar analysis of the idea into subject and attribute and attribution to the idea of the characteristics requisite to an Aristotelian class concept have been seen to be the basis of certain topical arguments against definitions produced by adherents of the theory of ideas (*Topics* 137 B 3-13, 148 A 14-22). Any such analysis of the ideas, however, seems to be forbidden by the Platonic dialogues which refer to them as pure and simple units (*Phaedo* 78 D; *Symposium* 211 A, E; *Republic* 476 A; *Philebus* 59 C; *Timaeus* 52 A); Aristotle's own insistence upon the fact that the substance of a unified whole is something other than the elements of its composition (*Metaphysics* 1041 B 11-33) is merely a restatement of Plato's doctrine that the syllable as a unit over and above its constituent letters is μονοειδές and ἀμέριστον (*Theaetetus* 205 D). The possible argument that in the employment of diaeresis Plato neglected or abandoned the indivisible unity of the idea is precluded by the implications of Aristotle's own criticism (*Metaphysics* 1045 A 17-20). Men exist, according to the doctrine of ideas, by participation in the idea of man, not by participation in the ideas of animal and biped. Aristotle objects that the analysis of man into animal and biped makes the idea of man superfluous and then that, since man partakes of animal and biped, the Platonists fail to explain how man can be a unit. He can complain that there is no explanation of substantial unity in this theory only because after analyzing the idea into constituent elements he

referred to the unity of definitions in general. Perhaps his failure to consider in his translation 1045 B 4-5 (*διὸ καὶ οὐκ ἔστιν ἕτερόν τι αἴτιον τοῦ ἓν εἶναι οὐθενὶ τούτων οὐδὲ τοῦ ὄν τι εἶναι*) helped him to this interpretation. That sentence (cf. [Alexander], *Metaph.*, p. 563, 6-27) shows that 1045 B 2-7 refers only to such things as have neither sensible nor intelligible matter, and 1045 B 1-2 indicates that this condition is fulfilled only by the *summa genera*, i. e. the categories. See also note 98 *infra*.

declares the unified substance to be superfluous. His own words, however, show that according to this theory men are organized wholes just because they participate in the unitary substantiality of a single idea.

Aristotle's treatment of diaeresis presupposes his own theory of the relation of genus to differentia as that of matter to form. Definitions reached by this method consist of the genus and the differentiae alone; and, since the genus does not exist apart from its species except as their matter and each stage in a proper division produces a differentia of the preceding differentia, the substance and definition are simply the ultimate differentia. Therein for him lies the unity of the definition and its object, which consists in the actualization of the generic matter in the form of the differentia That the final differentia is in fact the form Aristotle establishes by the argument that it involves in itself all the previous differentiae. Consequently, to give in the formula all the differentiae, as the Platonists do, is according to him mere tautology. Nevertheless, it is safe to say that Plato's reason for the enumeration of all the stages reached by diaeresis was due to the belief that each of these as a *unit* contributes to the understanding of the term to be discovered and that the being of none of them is " sublated " by the subsequent determination. Similarly what Aristotle calls the genus and regards merely as the material substrate formalized by the differentia remained as a separate unit in the Platonic formula, a separate unit coëxistent with the other factors Aristotle, therefore, attacks the Platonic definition of man by asking how the separate factors in it form a unity; white and man may be a unit when one is an attribute of the other as subject, but this cannot be true in the case of the definition, for the genus cannot participate in the differentiae lest it participate simultaneously in contraries. This argument, as has been seen, applies only against those who make the genus numerically one, which is Aristotle's way of designating the adherents of the theory of ideas (*Topics* 143 B 11-32). But such an exposition assumes that ζῷον is the genus of which δίπουν is the differentia. Where is the idea of man which, on this theory, exists as much as the ideas of animal and biped,

Metaphysics 1037 B 27-1038 A 35

Metaphysics 1037 B 13-27

which is other than these two, and by participation in which—not in the other two—individual men exist (1045 A 17-20)? It has disappeared entirely, analyzed by Aristotle into what he considers its material and formal elements;[81] and yet the coexistence of these three would suggest that animal and biped both stand in some sort of relation to man rather than to each other and that the latter is not in any way the *product* of the first two. The subordination of one of these ideas to the other so as to get a subject-predicate relationship expressing the third is a consequence solely of Aristotle's logical analysis, the same procedure leads him to consider the third as a separate unit to be "superfluous" and to reject all differentiae except the last in the definition. The origin of this notion may have been his study of Academic diaeresis; but it is only after he has stated the ἀπορία of Platonic "definition" that he proceeds to diaeresis (*Metaphysics* 1037 B 27); and it is this method, when correctly practiced with the genus treated as matter and the final differentia as form, that is presented as the solution of the problem of the unity of the definition (cf. *Metaphysics* 1045 A 23-25).

Aristotle's position depends ultimately upon whether or not

[81] Its disappearance is most painfully apparent in 1037 B 21-24 where Aristotle argues that, even if the genus does participate in the differentiae, the problem of the unity of definition remains unsolved, for πεζόν, δίπουν, ἄπτερον cannot constitute a unity merely because they "inhere" (in the genus) since then all the differentiae of the genus would form a unity. On the face of it it appears that anyone who sought to explain the unity of the idea of man by "inherence" would assert the inherence of the peculiar set of characteristics in that idea and not in the "genus" animal, and *Metaphysics* 1040 A 14-17 proves that it was in fact the idea to be defined of which was asserted the peculiar concatenation of characteristics. The same thing is indicated by *Topics* 128 A 20-29 where Aristotle attacks those who think that the differentia (as well as the genus, *ibid.* 128 A 12-19) is predicated of the *species* in its essence (see note 13 *supra*). Once Aristotle has analyzed the idea into genus and differentiae, however, his own terminology requires that the differentiae be represented as "present in" the genus as in matter. No further evidence is required to invalidate Stenzel's interpretation of this passage (*Zahl und Gestalt*, p. 135): "... dass Platon hier bewusst mit einer *coincidentia oppositorum* rechnete, ja gerade zu dem Erfassen jener mystischen Einheit, in der alles beschlossen war, als einer obersten ἀρχή, ἐν ᾗ πάντα ἐνυπάρχει fortschreiten wollte, das wird hier von Aristoteles genau bestatigt." Faust (*Der Moglichkeitsgedanke*, I, p. 71, n. 2) makes the correct observation that Plato's κοινωνία τῶν γενῶν, "nicht etwa ἕνωσις," contradicts Stenzel's assertion of a Platonic "mystische coincidentia oppositorum."

the universal can have substantial existence, for the Platonists according to his account treat the universal as a genus. He, therefore, proceeds to prove (Z, chap 13) that the universal cannot be a substance either in the sense in which essential nature is or as an element of the essence. This means that none of the elements in the formulae of *infimae species* are substances or exist apart from those species (1038 B 30-34), the import of which result for his criticism of Platonic definitions is emphasized by the additional argument that a substance cannot have as constituent elements actual substances.

On the basis of this conclusion the existence of Platonic ideas is attacked But, whereas the result of this attack is the statement that ideas in the Platonic sense do not exist, the difficulties are introduced as being the result of positing the ideas as separate substances and at the same time constructing the species of the genus and the differentiae. The "animal" which is in "man" and "horse" must for the definition (i. e. as genus) be one and the same but as a constituent element of the separate idea of man it must be a separate individual substance. The ideal animal must therefore be separated from itself There follows the argument that the ideal animal (i e. as genus) by participating in the differentiae will as one individual have at one time contrary attributes, and the attempts to circumvent this difficulty by speaking of "composition," "contact," or "mixture" of genus and differentiae are dismissed as absurd (cf 1045 B 9-16). Finally Aristotle develops the impossible consequences of the attempt to avoid the above difficulties by holding that the idea of animal is different in each species and closes the chapter by saying that these and further absurdities occur in applying the theory to the case of sensible objects.

Metaphysics 1039 A 24-B 19

This vivid expression of the incompatibility of substantial ideas and the logical analysis of the concept into genus and differentiae is possible only because the results of diaeresis have come to be regarded as not merely analytical but identical with existential relations. According to this latter point of view the lower stages of division must be *developments* of the higher (including the "genus") which can no longer be considered to exist in both senses, as self-subsistent unities and as the

qualified substrate of the various species. Aristotle's solution, which makes the genus merely the abstracted material element of the species existing only as informed by the ultimate differentiae of those species and which consequently renders the intermediate differentiae superfluous,[82] is only the conclusion of a debate of which traces still exist. Within the Academy Speusippus continued to practice the method of diaeresis (cf. Lang, *Speusippus*, pp. 21-22; Stenzel, *Speusippus*, pp. 1640 and 1649) but abandoned the ideas entirely because of such difficulties as those which have just been considered (*Metaphysics* 1086 A 2-5, 1090 A 7-11; cf. L. Robin, *Idées et Nombres*, n. 222). The so-called Διαιρέσεις Ἀριστοτέλους (§§ 64 and 65) testifies to the technical use at some time in the early Academy of the terms γένος, εἶδος, and διαφορά in connection with diaeresis, designates the γένος as "naturally prior" to the εἶδος, and explains that that is naturally prior to another which would in being destroyed involve the destruction of the other without being involved similarly in its destruction.[83] This form of diaeresis

[82] The intermediate differentiae are shown to be superfluous for the definition and the essential nature by the experiment of "transposition" (1038 A 30-34). Since the order is not an element in substance we can say ζῷον δίπουν ὑπόπουν as well as ζῷον ὑπόπουν δίπουν and by this transposition it becomes evident that ὑπόπουν is tautologous. Nevertheless, in the process of *constructing* a definition, Aristotle says (*Anal. Post.* 96 B 30-97 A 6, 97 A 25), it makes a difference which attribute is predicated first and which second; diaeresis enables one to achieve the right order and to be sure of omitting none in proceeding to the ultimate differentia. Bonitz (*Aristotelis Metaphysica*, p. 346) is right in saying that these two passages are not inconsistent, but it is instructive that Aristotle himself speaks quite differently and in what might well seem at first sight a self-contradictory fashion when he is explaining the *nature* of definition and essential nature and when he is describing the *method of discovering* them. One should bear it in mind that a similar difference is possible for Plato—and that Aristotle never considers the possibility.

[83] This "natural priority" of genus to species is employed by Aristotle in *Topics* 141 B 28-34, 123 A 14-19 (where lines 15-19 are based upon a corollary of 14-15), and *Metaphysics* 1059 B 38-1060 A 1 (the same method of argument on behalf of "Being" and "Unity" is repulsed on the ground that these are not genera, *ibid.* 1059 B 27-34). In *Metaphysics* 1019 A 2-4 Plato is said to have used the distinction "prior by nature and existence" to refer to such things as are not dependent on others for their being, while these others cannot be without them. Aristotle probably means that Plato introduced the distinction (attempts to identify a definite reference in Plato's works are not convincing, cf.

does not reckon with ideas at all (cf. § 64: *τὸ δὲ κοινὸν κατηγορούμενον ἐφ' ἁπάντων φαμὲν εἶναι τὸ γένος* with Plato, *Republic* 596 A: *εἶδος γάρ πού τι ἓν ἕκαστον εἰώθαμεν τίθεσθαι περὶ ἕκαστα τὰ πολλὰ οἷς ταὐτὸν ὄνομα ἐπιφέρομεν* and Aristotle's use of *τὸ κοινόν* against the ideas, pages 202-203, note 121, and note 56 *infra*), and here enters an unresolved inconsistency, for the genus is called the common predicate of the species which are "divisions" of it (§ 64) and yet is said to be prior to the species as the part is to the whole and the monad to the dyad (§ 65).[84] This form of diaeresis literally splits the genus into the parts present in the various species without explaining the unity which it nevertheless asserts. It is very close to Aristotle's own diaeresis, requir-

Ross, *Metaphysics*, I, p 317); but, although Apelt (*Beitrage zur Geschichte der griech Philosophie*, pp. 226 ff.) was wrong in seeing here a direct reference to *Timaeus* 34 B-C, he was right in saying that the distinction is there employed (cf *Laws* 892 C, 896 C)

Mutschmann (*Divisiones Aristoteleae*, pp xvii-xviii) believes that the reference here, as well as those in *De Part Animal.* 642 B 10-12 and *De Generatione* 330 B 15-17, is to a collection of Platonic *Διαιρέσεις* which Aristotle had at his disposal (cf also Zeller, *Phil Griech.*, II, 1, p 437, n 3) The passage in *De Part Animal.* speaks of *αἱ γεγραμμέναι διαιρέσεις* but makes no mention of Plato, the present passage need not refer to any "table of divisions" at all, since only a particular "distinction" which Plato made is mentioned. The third passage says that those who set up three *στοιχεῖα* really make the middle element a blend of the two extremes *καθάπερ Πλάτων ἐν ταῖς διαιρέσεσιν· τὸ γὰρ μέσον μίγμα ποιεῖ.* Joachim (*On Coming-to-Be and Passing-Away*, pp 214-217) is certainly right in taking this as a parenthesis which does not intend to attribute a triad of *στοιχεῖα* to Plato but merely cites him for the method of constructing the *μέσον* as a blend, a procedure which Aristotle is trying to attribute to certain Presocratics (cf *Crit Pres Phil*, pp 55-56) *Timaeus* 35 A ff, to which Joachim believes this parenthesis refers, does employ this method (n. b *τρίτον ἐξ ἀμφοῖν ἐν μέσῳ συνεκεράσατο οὐσίας εἶδος*), but so does *Philebus* 23 C-D (*τούτω δὴ τῶν εἰδῶν τὰ δύο τιθώμεθα, τὸ δὲ τρίτον ἐξ ἀμφοῖν τούτοιν ἕν τι συμμισγόμενον*, n b *διαλάβωμεν* [C 4], *κατ' εἴδη διστὰς καὶ συναριθμούμενος* [D 2]), and Aristotle's way of speaking probably indicates that he is referring to what he thought to be a general tendency of Plato rather than a single passage (cf. also Shorey, *A J. P.*, X [1889], p 63; *Class Phil*, XVII [1922], p 351).

[84] Xenocrates assumed the priority of the part to the whole in his argument for the indivisibility of the elements of body, *frag* 42 (*De Lin Insec* 968 A 15-16) Aristotle uses the argument in *Topics* 150 A 33-36, for his own doctrine cf *Metaphysics* 1019 A 7 14 As for Plato cf, besides *Theaetetus* 205 C-D, *Parmenides* 145 A-E, 153 C E, 157 D 158 A where all these possible relationships of "one," "whole," "part" are played with.

ing only the application of the metaphor "material" to the genus which has already lost all separate existence and is only the ghost of its original self; the species has really absorbed the genus, an indication that by those who used this form, as by Aristotle too, the diaeretical schema was taken to be identical with objective existential relations. Whether this was the attitude of Speusippus, who had abandoned the ideas, or of Xenocrates, who had identified them with mathematical numbers, we do not know; they both held to diaeresis, at any rate, and the difference in their metaphysics would make the pertinent criticisms of their logical methods and assumptions necessarily different. As for Plato himself, so far as his own writings give evidence, the method must have been conceived in an essentially different fashion. He does not distinguish genus and species ontologically or give any indication of the priority of the one to the other. The example by which he explains the "intercommunication" of ideas[35] in the *Sophist* (254 B-257 A) precludes the possibility of such a notion for those five ideas, and what is true of them is presumably true of all (254 C). The relation of the ideas to one another is that of implication or compatibility and its opposite, not that of principle and derivative or of whole and part. The schemata of diaeresis for Plato, then, do not *portray* the relational arrangements of the world of ideas but rather are instruments of analysis. And this is borne out by the *Sophist* and *Politicus*, which have come to be considered as hand-books of Platonic diaeresis; in these dialogues the method is treated as an instrument by which the search for a definite idea, its distinction from others, and its implications and identification may be facilitated, not as a description of the "construction" of the idea, its derivation, or its constituent elements (*Politicus* 258 C, *Sophist* 235 B-C). It is a useful means of narrowing the field of search (*Politicus* 261 E-262 A), but the formal method alone may lead one

[35] Although μετέχειν is here used as a synonym of κοινωνεῖν (συμμεταγνύναι is also so used), the word does not express the relationship which obtains between an individual and an idea (cf. Cornford, *Plato's Theory of Knowledge*, pp. 278-279). Aristotle, however, in criticizing the theory of ideas in connection with diaeresis draws no distinction between the μέθεξις which is κοινωνία and that which is "participation" of the individual in the idea.

to any number of definitions of the same thing unless one has the additional power of recognizing the essential nature that is being sought (*Sophist* 231 C-232 A) In short, diaeresis appears to be only an aid to reminiscence of the idea,[86] a process the stages of which are important rather as a safeguard to insure the right direction of the search (*Politicus* 262 B) than as representative of necessary ingredients of the idea, for "longer" and "shorter" roads may lead to the same conclusion (*Politicus* 265 A and 266 E). Plato himself, however, in the *Philebus* (15 A-B) indicates that the problem of diaeresis had cast doubt upon the validity of the theory of ideas [87] That he still thought it possible to use the method (admitting its fallibility, *Philebus* 16 B) in connection with the ideas is evidence for the diversity of opinion within the Academy concerning the significance of diaeresis and its relationship to ontology Aristotle, however, does not distinguish the merits and demerits of the different theories and apportion special criticism to each. He can treat all together as one inasmuch as all failed to make the genus the matter of which the final differentia is the form and can then show that, since this explanation alone accounts for the unity of definition and of essence, the theory of ideas is false

[86] L. Robin (*Platon*, pp 88 89) says that in the dialogues the "prépondérance croissante de la division est, semble-t-il, corrélative d'un effacement de la doctrine de la réminiscence" Nevertheless, in the *Phaedrus* (249 B-C) the same method of diaeresis as is described in the *Sophist*, *Politicus*, and *Philebus* is expressly called recollection of the ideas (cf *Phaedrus* 265 D-266 B, 277 B C, Shorey, *Unity*, p 51, n 377; *What Plato Said*, p 604 on *Philebus* 16 D), and in the *Politicus* (277 B 278 E) the formal outcome of the diaeresis considered unsatisfactory because of its lack of content (277 C) raises the whole problem of knowledge (277 D 7) which is briefly but unmistakably referred to the doctrine of reminiscence (277 D 2 4, 278 C-D, cf Shorey, *Unity*, pp 43-44) The *Timaeus* makes provision for knowledge by the same device (41 E) in the creation myth which parallels and recalls the provisions in the *Phaedrus* (cf *Timaeus* 41 E *τὴν τοῦ παντὸς φύσιν ἔδειξεν* and *Phaedrus* 249 B *οὐ γὰρ ἥ γε μήποτε ἰδοῦσα τὴν ἀλήθειαν εἰς τόδε ἥξει τὸ σχῆμα. Timaeus, ibid σπαρείσας αὐτὰς εἰς τὰ προσήκοντα ἑκάσταις ἕκαστα ὄργανα χρόνου* and *Phaedrus* 246 E-247 A, 250 B, 252 C ff) See note 160 *infra*

[87] *Περὶ τούτων τῶν ἑνάδων καὶ τῶν τοιούτων ἡ πολλὴ σπουδὴ μετὰ διαιρέσεως ἀμφισβήτησις γίγνεται.* "It is in the case of these units and those like them that the great concern connected with division grows into controversy" The controversy is then explained: *εἴ τινας δεῖ τοιαύτας εἶναι μονάδας ὑπολαμβάνειν ἀληθῶς οὔσας· κτλ.*

because it will not fit the analysis of species into genus and differentia

Reformed in accordance with these criticisms diaeresis becomes for Aristotle a serviceable instrument for establishing definitions and the basis for the classification of natural kinds. But with regard to its employment in the latter service he had still another fundamental criticism to make, for he perceived that for classifying a genus *dichotomic* diaeresis is useless. (Jevons, *Elementary Lessons in Logic*, pp 107-108, defends dichotomy in classification; cf against him Joseph, *An Introduction to Logic*,[2] pp. 124 f) This special criticism of dichotomy for classification begins in the second chapter of the essay on the parts of animals immediately after the scope and method of the work have been outlined. The notion that the last differentia is the form of the generic matter is presupposed (cf. 643 A 24-27), and on this basis it is objected that dichotomy would allow only a single differentia to each species of animal [38] and cannot avoid dividing homogeneous classes Some multipeds, for example, would fall into the class of land animals while others would be classified as water animals; for just such an unnatural division " the written diaereses " are cited, in which some birds are found in the class of water animals and others in another class. Furthermore, the " similarity " of birds has been recognized and given an established name just as the name " fish " has been applied to another recognized " similarity "; but there are other similarities, such as those of having blood and lacking blood, which

De Part. Animal. 642 B 5-644 A 11

[38] ἐνίων γὰρ ἔσται διαφορὰ μία μόνη (642 B 7) expresses the necessary result of dichotomy which shows it to be impossible by this method to classify the species; cf 643 B 12-13 τούτων δ' ἕκαστον πολλαῖς ὥρισται διαφοραῖς, οὐ κατὰ τὴν διχοτομίαν 643 B 15-17 shows that Aristotle means that *no* species reached by dichotomy can have more than a single differentia; Michael Ephesius (*De Part. Animal*, p 10, 9-10) and Ogle (*Oxford Translation*) misunderstood the passage by neglecting the conditional force of ἔσται. For the idiomatic understatement in 642 B 6 (τῇ μὲν οὐ ῥᾴδιον τῇ δὲ ἀδύνατον) cf *Metaphysics* 1085 A 29 (οὐ ῥᾴδιον λῦσαι, εἰ μὴ ῥᾷδιον δεῖ λέγειν τὸ ἀδύνατον) and Waitz (*Aristotelis Organon*, I, p 301) on *Categ* 8 A 29 In 642 B 8 ἄπουν must be omitted (cf Langkavel, *De Partibus Animalium, app crit*, p xx) On the many alterations made in the text of this chapter by the most recent editor (Peck, *Aristotle, Parts of Animals* [Loeb Class Library, 1937]) cf *A J P*, LX (1939), pp. 385 ff.

have not received the recognition of a single class name. The implication which is not here expressly developed appears to be that dichotomy based upon the similarities of groups with common names still may err by cutting across other similarities, which, though no less important, happen not to have been obvious enough to receive a conventional class term.[39] These two objections to dichotomy as a means of classification are then developed by a detailed argument the purpose of which is to demonstrate that the rules of proper dichotomy themselves prevent a correct representation of the natural classes and their relationships In the first place dichotomy must proceed by the use of privative terms; but, while a negative differentia as generic must be divisible by specific differentiae, there can be no differentiation of a privative term *qua* privative. In any case, the ultimate differentiae and the species of animals would be equal in number according to the practice of those who use dichotomic classification, for the species is just the differentia in the matter;[40] but in order to attain this correspondence

[39] In *De Gen. Animal.* 732 B 15-32 Aristotle attacks, in passing, the use of organs of locomotion (i e. the Academic ζῷον ἄπουν, πεζόν, πολύπουν, δίπουν) as a standard for the classification of animals The standard which he there prefers, the mode of reproduction, is connected with the distinction, sanguineous—bloodless, mentioned in the present passage, the grade of perfection of an animal is indicated by the method of reproduction as it is by the mechanism of "cooling," both of these depending upon the amount and nature of the blood (or its analogue). For the connection of blood, heat, mode of reproduction, "cooling," and stage of perfection see *Hist Animal.* 520 B 27-29, *De Part Animal* 647 B 29-648 A 13, 668 B 34-669 A 6, 682 A 34, *De Gen Animal* 718 B 34 719 A 2, 732 B 8-11 (in line 8 excise the words ἢ φθοροῦντα with Platt, *Oxford Translation*), 733 A 32-B 23 The "similarity" here disregarded by the classifications criticized is for Aristotle, then, one of the most significant The Academic classes πεζά, ἔννδρα are tacitly rejected in *Hist Animal* 589 A 10-590 A 12 where they are shown not to be exclusive because they have three different senses In *Topics* 144 B 32-145 A 2 the merely local sense is rejected for classification, for it is not a differentia of essence

[40] The argument in 643 A 7-27 does not yet introduce the objection that more than one differentia is needed for each species, that is first hinted at in 643 B 9-10 and developed in 643 B 28 644 A 11 The argument here is connected with the preceding dilemma concerning privative terms and has two sides inasmuch as according to dichotomy one proper differentia must characterize each indivisible species there can be no indivisible differentia which is still common and so the privative terms of the dichotomy must be divided (643 A 7-16), but, inasmuch

differentiation of the privative terms is necessary. Moreover, the differentiations allowable in dichotomy are strictly limited: the terms must be elements of the essence and not essential accidents and they must be true opposites In addition, it is necessary to avoid such dichotomies as would divide a natural class; in the case of living creatures the corporeal or psychical functions common to them (n. b. not "the functions common to body and soul"; cf J. B Meyer, *Aristoteles Thierkunde*, Berlin, 1855, pp. 89-102) present this difficulty, and here the diaereses cited err in making the dichotomies "walking—flying" (certain classes present both characteristics) and "wild —tame" (almost every class that exhibits tameness has also wild specimens) This disruption of a single class is a necessary consequent, however, of the adoption of a single principle of division.

The natural classes in which Aristotle is here interested are characterized by multiple differentiae and so cannot be found by dichotomy which at best would furnish a single differentia. Nor can this objection be met by combining the antecedent terms with the final differentia unless new principles of differentiation be introduced in the course of the dichotomy (a transgression of the rules, cf. *Metaphysics* 1038 A 9-18), in which case there would be no continuity in the division, for the unity of the dichotomy rests in the unity of the principle of division and that requires that each division be made according to the essential differentiae of the antecedent term. Therefore, more than a single differentia must be taken at the very start; thus the classes can be assigned multiple differences and the privative terms will furnish differentiations as they cannot in dichotomy

So far as it is concerned with the matter of privative terms Aristotle's criticism of dichotomy as a means of classification is just, and for the purpose of classification it is also true that the genus should be divided immediately by its natural *coördinate* differentiae, no matter what their number may be (cf. H. W. B. Joseph, *op. cit.*, pp 122-126). Nevertheless, his attempt to prove that the diaeresis used by his predecessors allowed only

as there is no differentiation as such, dichotomy affords fewer differentiae than are necessary for the one to one correspondence between differentiae and species (643 A 16-27).

one differentia to each species is based not upon the method as used in the Academy but upon his own interpretation of that method. We have seen that in the *Metaphysics* (1038 A 5-21) he sought to prove that the final differentia is the essence and the definition and that he did this by insisting that in division the genus is the matter of the differentiae and that each step must establish the differentia of the preceding differentia. To divide in any other way, he said, was to introduce accidental characteristics and would result in more than one differentia (1038 A 26-28). This notion of dichotomy is necessitated by Aristotle's explanation of the unity of the definition on the basis of matter and form, potency and actuality (cf. Bonitz, *Aristotelis Metaphysica,* II, p. 346, n. 1); and in our present passage it is assumed as the only proper form of dichotomy. Previous dichotomies he criticizes as departing from it by introducing divisions which are "accidents," and the reason why this is not allowed, even when they are "essential accidents," is the same as that which in the *Metaphysics* motivates this formulation of dichotomy, the theory of the unity of the definition as the actualization of the genus in the final differentia (643 B 17-23; cf. 643 A 27-31). It is, however, the very specifications according to which the method is thus reformed which cause its rejection. At the end of this critique (643 B 26-644 A 11) he returns to the objection stated at the beginning (642 B 7-9) and undertakes to demonstrate that no specific form can be reached by dichotomy because no species can have a single differentia and only one differentia can be attained by dichotomy. This latter point is true only if Aristotle's interpretation of the relationship of the stages in the dichotomy be accepted; consequently, he is concerned to show once more that the antecedent differentiae in dichotomy are not really a plurality. All except the last are really superfluous, for they are only stages in the process that ends in the determination of this last differentia. This process, however, ending in an atomic differentia does not reach the ultimate division and the species, for in the division which gives "cleft-foot" or, in combination of the stages, "footed, biped, cleft-foot" only one differentia of man is attained. Since he is not merely "cleft-foot," there must be more than one differentia; and,

since a single dichotomy can reach only one, it is impossible to reach any ultimate species by dichotomy.[41]

For these reasons Aristotle rejects dichotomy as a means of classification of natural kinds, although diaeresis of a kind he still retains for this purpose. But this is not the most important result of the present criticism for the understanding of his critical method. In that regard the significance lies in the fact that Aristotle, having remolded the method of dichotomy in order to account for the unity of essence and definition, by proceeding in accordance with this conception to deny the possibility of introducing any division that is not a differentia of the essence of the preceding differentia [42] concludes that by this

[41] The purpose of 643 B 28-644 A 6 is to show that the result of dichotomy is a single differentia whether this be expressed as "simple" or "compound." The text of 643 B 30-34 (λέγω δὲ . . . σχιζόπουν) is uncertain (cf. Langkavel, *app. crit.*, p. xxi) but 644 A 3-6 shows that Aristotle means to say that the repetition of all the antecedents along with the final differentia, i. e. πᾶσα ἡ σύμπλεξις, is no different from the simple statement of the final differentia. The fact that each dichotomy proceeds until it reaches a single atomic differentia shows that there cannot be more than one in each dichotomy (644 A 1-3. ὅτι δ' ἀδύνατον . . . δῆλον ἀεὶ γὰρ κτλ.); but this argument depends upon the assumption that none but the last is really a differentia, and this must be the meaning of 643 B 33-644 A 1, two sentences in which Aristotle tries to prove this point from the inner construction and from the external expression of the dichotomy in which all the antecedents are added to the final term. In the first place the continuity of the differentiae, he says, indicates that the whole is a unit (cf. συνέχεια with A 19, the false continuity of conjunction when the proper differentiae are not taken). But from the form of expression itself it appears that there is only the final differentia and that the antecedents are superfluous (Ogle's translation of ἀλλὰ παρὰ τὴν λέξιν κτλ., "But one is misled by the usages of language into imagining that it is merely the final term of the series . . . that constitutes the whole differentia, and that the antecedent terms . . . are superfluous," cannot be right, for that would contradict Aristotle's statement in this very connection [642 B 7-8] that the antecedent terms in a dichotomy *are* superfluous. The sentence ἀλλὰ παρὰ τὴν λέξιν συμβαίνει δοκεῖν τὴν τελευταίαν μόνην εἶναι διαφοράν κτλ., is only another way of putting the words of *Metaphysics* 1038 A 21-25 περίεργον γάρ. συμβαίνει δέ γε τοῦτο· ὅταν γὰρ εἴπῃ ζῷον ὑπόπουν δίπουν, οὐθὲν ἄλλο εἴρηκεν ἢ ζῷον πόδας ἔχον, δύο πόδας ἔχον· κἂν τοῦτο διαιρῇ τῇ οἰκείᾳ διαιρέσει, πλεονάκις ἐρεῖ καὶ ἰσάκις ταῖς διαφοραῖς. That δοκεῖν does not necessarily imply a "false impression" may be seen from the passages cited in *Index Aristot.* 203 A 24 ff.)

[42] This rule which ends in making dichotomy useless even for the establishment of a definition was motivated by the desire to explain the unity of essence

method, which now can provide only a single differentia that is merely the actualization of the potency of the genus, no species can be attained because none is defined by a single differentia. Such an objection, however, impeaches dichotomy not only as a method of classification but also as an instrument for establishing a definition in the form in which Aristotle himself employs it (*Anal. Post.* 96 B 25-97 B 6); and yet one cannot eradicate this inconsistency by supposing that the criticism of the *Parts of Animals* indicates a surrender of the doctrine of the *Posterior Analytics* and the *Metaphysics*, for this very criticism depends for its force upon the theory of the latter work and proceeds by constraining the diaeresis of the Academy into the rules of that theory. The argument of the *Metaphysics* on which the unity of the definition is based is repeated here in order to prove that dichotomy cannot provide more than a single differentia (cf. *Metaphysics* 1038 A 9-30, 1045 A 12-14 and *De Part. Animal.* 643 B 17-23; *Metaphysics* 1038 A 5-9, 1045 A 23-33 and *De Part. Animal.* 643 A 23-27), but in so doing it incidentally raises anew the problem which it was originally meant to solve. If the essence of the species is really constituted by multiple differentiae which cannot be reached by dichotomy, Aristotle's strict form of dichotomy does not explain wherein consists the unity of essence and definition, and so the banishment of "essential accidents" from the process has no excuse; whereas, if such principles of division be allowed, the objection that dichotomy cannot provide the multi-

as the actualization of the genus in the final differentia and not by any consideration of the necessary relations among the differentiae in a dichotomy leading to definition. H. W. B. Joseph (*op. cit.*, p. 127) says of the differentiae in a dichotomy: "At every stage of our division the differentia taken must either be a modification of the differentia next before it, or at least be capable of combining with those that have preceded it in the construction of one concept in such a way that we are throughout specifying the general notion with which we started." The alternative clause provides for an obvious necessity which would not be allowed by the strict rules of Aristotle of which Bonitz (*Aristotelis Metaphysica*, II, p. 346, n. 1) says, ". . . possunt etiam differentiae plures, quae ad eandem pertinent notionem definiendam, ex diversis generis dividendi rationibus petitae esse et tamen ad definiendam notionem perinde esse necessariae, quamquam *inter se* sane contunguntur κατὰ συμβεβηκός. Sed is error prope necessarius videtur, ut ex illa materiae et formae distinctione id quod vult, unitatem dico notionis, possit explicare."

ple differentiae which characterize the species has no validity. Nevertheless, while still retaining the logical and metaphysical doctrine which he had formulated and even using it to criticize previous methods of classification, Aristotle here concerned solely with his present purpose, the analysis and classification of the natural species before him, has no regard for the possible bearing of his criticism upon the origin and nature of that criticism in other fields of investigation.

We have yet to determine who is the object of this criticism and also, if possible, the identity of " the written divisions " to which specific reference is here made (642 B 12, 643 A 36). These according to Ogle (*Oxford Translation*, note on 642 B) and Joachim are the *Sophist* and *Politicus* of Plato; Mutschmann saw in them a reference to a collection of Platonic *Divisions*; according to Stenzel (*Speusippus*, p. 1657) they were tables prepared by the students of the Academy under Plato's direction as a common project and were looked upon as the joint property of all the school (see also note 33 *supra*). Examples of the particular distinctions to which Aristotle objects can, it is true, be found in the two dialogues mentioned The division πορευτικὰ καὶ πτηνά (643 A 1) may be identified with the πτηνὸν καὶ πεζόν of *Politicus* 264 E and the dichotomy ἥμερον—ἄγριον (643 A 3) occurs in *Politicus* 264 A, while a superficial glance at *Politicus* 264 C-D or a faulty memory of that passage might be held responsible for the statement that some birds are classified with marine animals and some in another division (642 B 10-13).[48]

[48] The mention of geese and cranes in 264 C followed by the division ἔνυδρον—ἐνυδατικόν which provides the dichotomy of κοινοτροφική into ὑγροτροφικόν and ξηροτροφικόν in D might seem to classify some birds with fish, especially since the prime consideration here ought to be the way of feeding, but in E it appears that πτηνόν is parallel to πεζόν as a division of ξηροτροφικόν.

The differentiae ἥμερον—ἄγριον occur also in *Sophist* 222 B-C where θηρευτική, which has been made a kind of κτητική (221 B), is divided into θῆρα ἀγρίων and θῆρα ἡμέρων and this last again into πολεμική and πιθανουργική A similar passage in the *Laws* (823 B) makes war a kind of θῆρα ἡμέρων, which is opposed to θῆρα θηρίων and with it divides τὰ πεζὰ θηρεύματα. In a passage of the *Politics* (1256 B 23 26) Aristotle seems to criticize one or both of these passages when he says that war is a form of acquisition, for of war hunting is a part which must be used against wild beasts and such men as are natural but unwilling subjects of rule (for the construction of the sentence cf. Newman, *The Politics*

Animals of water, land, and air, however, really form three distinct classes here as they do in *Sophist* 220 A-B where ζῷον is divided into πεζόν and νευστικόν and the latter into πτηνόν and ἔνυδρον and in *Laws* 823 B where ἔνυδρα, πτηνά, and πεζά constitute a trichotomy. Moreover, the variations of the *Politicus* show that no fixed classification of animals is intended or presupposed, for, while in 264 C-E of that dialogue πεζόν and πτηνόν are parallel divisions of ξηροτροφικόν, in 266 E πτεροφυές is a division of δίπουν which is itself a division of πεζόν (see note 15 *supra*). In the *Timaeus* again where universal classification is most in keeping with the plan of the dialogue there is a tetrachotomy of living beings: μία μὲν οὐράνιον θεῶν γένος, ἄλλη δὲ πτηνὸν καὶ ἀεροπόρον, τρίτη δὲ ἔνυδρον εἶδος, πεζὸν δὲ καὶ χερσαῖον τέταρτον (39 E-40 A, cf. 91 D-92 B); and, although in the *Sophist* the divisions are dichotomous despite the express recognition that such divisions do not offer an exhaustive *classification* (cf. *Sophist* 223 C, 225 C, 229 B, 230 D), dichotomy for the purpose of classification is abandoned in the *Politicus* (289 A-B [and notice here: βίᾳ μέν, ὅμως δὲ πάντως ἑλκόμενα], 289 E-291 C, mixture of trichotomy and dichotomy in 291 D-E) and is expressly said to be often impossible, in which case it must be replaced by a *natural* classification (*Politicus* 287 C; cf. *Philebus* 16 D [n. b. Olympiodorus, *In Philebum Scholia*, ed. Stallbaum, p. 250: διὰ τῶν εἰδῶν διαιρεῖν ἀλλὰ μὴ διὰ εἴδους καὶ ἀποφάσεως καθάπερ Ἀριστοτέλης ἠξίου] and *Phaedrus* 265 E: κατ' ἄρθρα ᾗ πέφυκεν). Even the uselessness of divisions determined by a merely privative differentia is anticipated in the *Politicus* (262 A-263 B). All this makes it highly improbable that the "divisions" here mentioned by Aristotle are any of the dialogues of Plato; and this improbability is heightened by the fact that Aristotle is referring to an exhaustive classification in which the various species of birds, for example, were assigned each to its proper class (642 B 12-13). Nor is there any likelihood that the source from which the

of Aristotle, II, pp. 177-178). So he makes θηρευτική a kind of πολεμική which is a kind of κτητική, which is an inversion of Plato's division, but he himself makes tacit use of the difference ἄγριον—ἥμερον, for by grouping together wild beasts and "savages" he gets his division of πολεμική into two kinds, one of which is "hunting" just because its objects, whether beasts or men, are ὅσοι πεφυκότες ἄρχεσθαι μὴ θέλουσιν.

Διαιρέσεις Ἀριστοτέλους was drawn is the corpus of written divisions mentioned by Aristotle here, for in that work not only is the genus animal divided by trichotomy but the method of trichotomy is far more important than any other.[44] That Aristotle may have felt his criticism to be applicable to Platonic method and even to definite passages in the dialogues is very probable, but his language makes it clear that he is referring particularly to a *published* book or books with which his audience is acquainted (n b αἱ γεγραμμέναι διαιρέσεις) and which contained exhaustive classifications of natural species based upon dichotomy. Such was the work of Speusippus, ἡ περὶ τὰ ὅμοια πραγματεία, the second book of which was a classification of plants and animals, in connection with the Διαιρέσεις καὶ πρὸς τὰ ὅμοια ὑποθέσεις.[45] Stenzel (*Speusippus*, p 1653) was justified in holding that the remarks of Aristotle in chapter 2 describe exactly the method of Speusippus, but the definiteness of the references—the prominence of ὁμοιότης as the principle of grouping in the system criticized (642 B 13-16; cf Speusippus, *frags.* 5-23) and the use of dichotomy as the means of classification[46]—points unmistakably to the writings of Speusippus as the

[44] Of the 69 chapters of the *Divisiones codicis Marciani* 37 are trichotomies, 14 give fourfold and 12 fivefold divisions, 1 (§ 69) is not really a "division" at all, 5 are dichotomies. The overwhelming majority of trichotomies may perhaps indicate that the chief influence was Xenocratean (cf Heinze, *Xenokrates*, pp 1-2).

[45] Concerning the title Ὅμοια cf Lang, *Speusippus*, p. 17, and on the content Lang, *op. cit.*, p 15 and Stenzel, *Speusippus*, pp 1640 41, concerning the Διαιρέσεις κτλ cf Lang, *op. cit.*, pp 21-22 and Stenzel, *op. cit.*, pp 1648-9, whose alternative suggestion concerning the relation of the work to the Ὅμοια (p 1649, lines 28 ff.), however, is unconvincing, for it is inconsistent with his own interpretation of the contents of the Ὅμοια (p 1648, lines 38 ff.). However that may be, the two works together clearly dealt with natural classification in the form of "division," the "similarity" of species determining the grouping.

[46] Cf. Lang, *op. cit.*, p 14: "Itaque in hoc fragmento non solum ordines animalium (quamquam non omnes) cognoscere, sed etiam in totius generis, cuius partes ei ordines erant, compositionem inspicere nobis licet. Id enim pro certo habere possumus in hoc genere coniunctos fuisse duos ordines cochlearum et concharum, conchae vero ipsae rursus in duos ordines divisae erant." On Speusippus' use of division based upon the principle πότερον ταὐτὸν ἢ ἕτερον cf Lang, *op. cit.*, pp 24-26 and Hambruch, *Logische Regeln*, pp 27-29 where are given the passages in the *Topics* where traces of Speusippean usage can be found.

γεγραμμέναι διαιρέσεις. Still more exact details of correspondence between the system criticized in this passage and the fragments of Speusippus are discernible and so guarantee the identification *Fragment* 5 of the Ὅμοια (⟨τὸ σίον⟩ ἐν ὕδατι γίνεσθαι, σελίνῳ ἑλείῳ ἐοικός, cf. also Lang, *Speusippus*, pp 8-9) retains an indication of the importance for Speusippus of natural habitat concerning which Aristotle raises the difficulty in 642 B 10-13 (see also note 39 *supra*); and the same difficulty raised in regard to the class of πολύποδες (642 B 19-20) gains significance when it is noted that Speusippus recognized such a special class (*frag.* 16). The objection to dichotomic classification because of the impossibility of differentiating a privative term as such implies a scheme in which both sides of the bifurcation were equally extended and so also fits the form of Speusippus' system; and the admonition against distinguishing in the case of living creatures τοῖς κοινοῖς ἔργοις τοῦ σώματος καὶ τῆς ψυχῆς, οἷον καὶ ἐν ταῖς ῥηθείσαις νῦν πυρευτικὰ καὶ πτηνά (643 A 35-B 1) corresponds with the method of investigation rejected in 639 A 18-19 (τὰ κοινῇ συμβεβηκότα πᾶσι κατά τι κοινὸν ὑποθεμένους), which is exactly the method of Speusippus as its tendency is stated by Diogenes Laertius (IV, 2): οὗτος πρῶτος ἐν τοῖς μαθήμασιν (cf. Zeller, *Phil. Griech.*, II, 1, p. 997, n. 1) ἐθεώσατο τὸ κοινὸν καὶ συνῳκείωσε καθόσον ἦν δυνατὸν ἀλλήλοις (cf. Lang, *Speusippus*, pp 23-24). When, further, in objecting to the use of such differentiae as "wild" and "tame" Aristotle presents his opponent with a dilemma based upon the Speusippean argument from the relation of name to concept and employing the term "homonymous" in the sense in which Speusippus used it, he removes all doubt concerning the identification (643 B 3-8).[47] The objection to the

[47] ὧν ἕκαστον, εἰ μὲν ὁμώνυμον, οὐ διῄρηται χωρίς, εἰ δὲ ταῦτα ἓν εἶδει, οὐχ οἷόν τ' εἶναι διαφορὰν τὸ ἄγριον καὶ τὸ ἥμερον ἕκαστον refers to the class name (i. e. man, horse, etc), ταῦτα to the individual tame and wild members to whom that name is applied Ταῦτα ἓν εἴδει signifies the requisite of the συνώνυμον lacking in the case of ὁμώνυμον according to the Speusippean usage of these words, in this passage it repeats the usage of *Topics* 103 A 10-11 ⟨ταὐτὸν⟩ εἴδει δὲ ὅσα πλείω ὄντα ἀδιάφορα κατὰ τὸ εἶδός ἐστι οἷον ἄνθρωπος ἀνθρώπῳ , where Hambruch (*Logische Regeln*, p 29, n. 1) has shown that the distinctions are Speusippean (note also the use of the principle of ὁμοιότης, 103 A 16-23) The dilemma depends upon the Speusippean notion that a name is ὁμώνυμον if it refers to several different concepts and συνώνυμον if it refers to one single and

lack of internal unity resulting from dichotomy as practiced in the system criticized (643 B 17-23, cf. *Metaphysics* 1045 A 12-14) is of a piece with the criticism of the "episodic" nature of Speusippus' metaphysics and ontology (*Metaphysics* 1075 B 37-1076 A 3, 1090 B 13-20, cf 1028 B 21-24). For Speusippus the concept of ὁμοιότης was a real unifying bond within the classes and among the classes (cf. Stenzel, *Speusippus*, p. 1664); to Aristotle this σύνδεσμος in both cases was simply an external "combination" which left the unity of the ἄτομον εἶδος and of φύσις as a whole entirely unexplained.[48]

undifferentiated concept Understood in this fashion the wording and argument of the passage are clarified —Speusippus used "wild" and "tame" as principles of division but classified "man" as a single species and "horse" as another single species although both wild and tame specimens of each exist If, however, each of these class names is homonymous, it has not been divided into its infimae species (for διῄρηται χωρὶς cf. *Politics* 1329 A 41 δεῖ διῃρῆσθαι χωρὶς κατὰ γένη τὴν πόλιν καὶ τό τε μάχιμον ἕτερον εἶναι καὶ τὸ γεωργοῦν), but, if these wild and tame specimens are specifically one, the class name is συνώνυμον and "wild" and "tame" cannot be specific differentiae at all.

For the difference between the usage of Speusippus and Aristotle cf Hambruch (*Logische Regeln*, pp 27-29) who discovered the Speusippean usage in *Topics* 107 B 4 and 17 and because of this and the frequent occurrence of the Speusippean topic of the similarity and difference of ὄνομα and λόγος (107 A 3-4, 20, 107 B 21-23, 27-29, 33-34) suggested that *Topics* A, chap. 15 stood in close relation to a book of Speusippus In view of the importance which Speusippus attached to the "division of words" and the relation of word to concept as the basis of this division, I should suggest that it is he to whom Aristotle refers when he denies that all refutations are παρὰ τὸ διττόν, καθάπερ τινές φασιν (*Soph Elench.* 177 B 7-9) Poste (*Sophistici Elenchi*, p 151) rightly identified the opponent here with the person against whom Aristotle argues at length in *Soph. Elench.* 170 B 12-171 B 2 and who divided arguments into two classes, πρὸς τοῦνομα and πρὸς τὴν διάνοιαν, but Poste (*op. cit.*, p 123) on the basis of a corrupt fragment of Eudemus in Simplicius, *Phys*, p 98, 1-3, thought the person meant was probably Plato. All that Eudemus says, however, is that Plato first introduced τὸ δισσόν and solved many difficulties thereby (cf Simplicius, *Phys.*, pp 115, 27; 120, 9) That he stressed the importance of arguing to the thing signified rather than to the name may be seen from *Sophist* 218 C and *Cratylus* 439 A-B, but there is no indication that he thought that a classification of names would solve all fallacies of argument or that he reduced all sophistical refutations to ambiguity Such a conclusion, however, fits the scheme and purpose of Speusippus' "division", and the fact that, as it appears from 171 A 12-16, the proponents of this doctrine held mathematicals to be the model of unambiguous terms increases the probability that Speusippus and his followers are meant

[48] Aristotle himself, however, makes use of the principle of ὁμιότης as a

Whereas it is the feature of dichotomy to which Aristotle objects in the classificatory diaeresis of Speusippus, in the case of using dichotomy to establish a definition he attacks his thesis that definition of a single concept is possible only after the differentiae of that concept in respect to every other have been established Speusippus, in short, held that an exhaustive classification of nature in a scheme which would set forth the relations (i. e the similarity and difference) of each object to every other and to the whole was itself the only possible means of defining the nature of any one object.[49] Against this notion Aristotle

Anal. Post. 97 A 6-22

method for determining the relationship of objects to one another with a view to induction, hypothetical arguments, and the production of definitions (cf *Topics* 108 B 7-31); for him this principle becomes the foundation of the "argument from analogy." Cf *Topics* 108 A 7-17 —*τὴν δὲ ὁμοιότητα σκεπτέον ἐπί τε τῶν ἐν ἑτέροις γένεσιν ὡς ἕτερον πρὸς ἕτερόν τι οὕτως ἄλλο πρὸς ἄλλο . . καὶ ὡς ἕτερον ἐν ἑτέρῳ τινὶ οὕτως ἄλλο ἐν ἄλλῳ . . μάλιστα δ' ἐν τοις πολὺ διεστῶσι γυμνάζεσθαι δεῖ* (cf 108 B 23 ff —*ὁμοίως δὲ καὶ ἐν τοῖς πολὺ διεστῶσι χρήσιμος πρὸς τοὺς ὁρισμοὺς ἡ τοῦ ὁμοίου θεωρία . .*) *. σκεπτέον δὲ καὶ τὰ ἐν τῷ αὐτῷ γένει ὄντα, εἴ τι ἅπασιν ὑπάρχει ταὐτόν, . ᾗ γὰρ ὑπάρχει τι αὐτοῖς ταὐτόν, ταύτῃ ὁμοιά ἐστιν* (cf Plato, *Parmenides* 148 A and Hambruch, *Logische Regeln*, p. 26) The importance of this notion for Aristotle's "comparative morphology" may be seen from *De Part Animal* 644 A 16 22 *ὅσα μὲν γὰρ διαφέρει τῶν γενῶν καθ' ὑπεροχὴν καὶ τὸ μᾶλλον καὶ τὸ ἧττον ταῦτα ὑπέζευκται ἑνὶ γένει, ὅσα δ' ἔχει τὸ ἀνάλογον χωρίς . . .* cf 644 B 1-15 and *Hist. Animal* 588 B 2-3 —*ὥστ' οὐδὲν ἄλογον εἰ τὰ μὲν ταὐτὰ τὰ δὲ παραπλήσια* (a Speusippean term, cf Speusippus, *frags* 7, 8, 11, 17, 19, 22) *τὰ δ' ἀνάλογον ὑπάρχει τοῖς ἄλλοις ζῴοις.*

[49] The ancient commentators on *Anal. Post.* 97 A 6-22 all assign to Speusippus the doctrine there opposed; the anonymous commentary, which according to Wallies (*Joannis Philoponi in Aristotelis Analytica Posteriora Commentaria*, praef., p v, n. 4) is older than Philoponus' commentary and drew from that of Alexander now lost, quotes Eudemus for this identification Philoponus and Eustratius suppose that Speusippus sought in this way to destroy the possibility of definition (*δι' ὧν ἐπέχειρει ὁ Σπεύσιππος ἀναιρῆσαι καὶ τὴν διαίρεσιν καὶ τοὺς ὁρισμούς*, Philoponus, *Anal Post.*, p 405, 26-27), a mistaken interpretation of which the anonymous commentary is not guilty, there the stress is correctly put upon Speusippus' demand for knowledge of the particular difference of the definiendum with respect to every object with which it is not identified (a demand which he apparently did not consider exorbitant since he undertook to meet it in his own classificatory works): *ἀλλὰ μὴν ἀδύνατον τὴν πρός τινα διαφοράν τινος εἰδέναι μὴ εἰδότα κἀκεῖνα ὧν τὸ προκείμενον διαφέρει. δεῖ ἄρα πάντα εἰδέναι τὸν ὁριζόμενόν τι, καὶ γὰρ καὶ τοῦτο* ⟨*δ*⟩ *ὁρίζεται ὁ ὁριζόμενος* (*πῶς γὰρ ἂν αὐτὸ ὁρίσαιτο;*) *καὶ τἆλλα πάντα ὧν ὡς ἕτερον ὂν αὐτὸ ὁρίζεται* (Anon *in Anal Post. Lib. Alt.*, pp. 584, 27-585, 1).

maintains that a dichotomy of "exclusion" can arrive at the essence of any given object without the necessity of determining the nature of any other. This amounts to a defense of the Platonic diaeresis as adopted by Aristotle against the direction given that method by Speusippus, but the fundamental differences of the three forms Aristotle does not notice, for he refers to diaeresis, whether in attacking or defending it, as if it were a single method without variations. For Plato, however, the independent existence of the ideas furnished a goal for the search conducted by means of "division" which Speusippus no longer had, once he had abandoned those entities. Consequently, the essential nature of any one concept must for him exist solely in its relations of likeness and difference to every other concept, relations which, while for the believer in ideas they could be simply necessary implications of absolute essences, must with the loss of the ideas come to *constitute* the essential nature of each thing. The principle of ὁμοιότης, the relations expressed by ταὐτόν and ἕτερον, changed then from an heuristic method to the content of existence itself.[60] For Aristotle, too, the absence of independent ideas had necessarily to change the meaning of the Platonic method. But his doctrine of the specific form as the actualization of the generic matter which in itself was merely the potency of becoming the species allowed him to consider diaeresis as an analytical diagram of the essential nature of each actual species showing the course of the actualization of the genus (cf. *Anal. Post.* 96 B 30-35); this is the specification of each object, the differ-

[60] That the determination of ταὐτόν and ἕτερον as a means of division and its connection with the principle of ὁμοιότης were adopted by Speusippus from Plato (and used, as has been seen, by Aristotle also) is undeniable (cf Hambruch, *Logische Regeln*, pp 26 ff). But the necessary difference in the meaning of this principle consequent upon the presence or absence of the doctrine of ideas has been constantly overlooked with the result that Speusippus' exhaustive natural classification has been represented to be essentially the "later philosophy" of Plato as by Stenzel (*Speusippus*, p 1651). Neither the passages from the dialogues cited by him nor those referred to by H Maier (*Syllogistik*, II, 2, p. 37, n. 1) imply a classificatory system such as that of Speusippus; *Meno* 81 D and *Politicus* 278 C-D, for example, to which Stenzel points for support of his thesis, both found the possibility of knowledge upon the doctrine of reminiscence and so show that diaeresis is merely a practical expedient for recalling the essential nature of a given object

entiae being stages in the process (i. e exclusive possibilities of actualization) and not, except accidentally, relations among the actual species.

The requisite for the definition of a species is a collection of attributes each of which is more extensive than the definiendum (though not more extensive than the genus) but all of which taken together are commensurate with it (*Anal. Post* 96 A 24-B 14); that such a collection is the definition depends upon the assumption that all the attributes are ἐν τῷ τί ἐστι κατηγορούμενα and that the collection is peculiar to the definiendum, an assumption which—Aristotle has already shown—makes it impossible to *demonstrate* the resulting definition (*Anal. Post.* 92 A 6-19, see pages 34-36 *supra*). The definition of a genus is to be acquired by a collection of the definitions of the various species within the genus and a selection of the peculiar properties common to all these, for the properties inhere in the genus only secondarily as inhering essentially in the simple species (*Anal. Post.* 96 B 15-25) It is obvious that to use this method one must be sure of the relative extension of the attributes and the completeness of the enumeration of those attributes in the essential nature; the necessary and sufficient means of assuring this is dichotomic division, so that, useless for demonstration as it is, this instrument becomes for Aristotle the ultimate means of establishing definitions (*Anal. Post.* 96 B 25-97 A 6) and as such he has to defend its validity against the contention of Speusippus that unless expanded into a classificatory system it cannot distinguish a given species from all others. Speusippus' thesis rested upon his extreme interpretation of the principle of ὁμοιότης, and Aristotle opens his defense by distinguishing between essential and accidental differentiae, the former of which alone, he insists, determines that a species is ἕτερον. Speusippus' doctrine of ταὐτόν and ἕτερον required for the definition of any one species a knowledge of the διαφοραὶ πρὸς ἕκαστον because the οὐσία of each species consists in its relationship to every other; to this Aristotle opposes the theory that the οὐσία is the specific differentiation of the genus, so that the course of that actualization and the final differentia in which it terminates alone define the essence. Consequently, if one knows that the object sought falls into

one of the two opposite divisions which exhaust the genus and further knows into which of the two it falls, it is unnecessary to know of how many other subjects the differentiae are predicated, for by proceeding in this fashion to the point at which there is no further differentiation one will have the formula of the essence The opposites without a middle term are the alternative possibilities of the differentiation of the genus which consequently must be exhausted by them, and the nature of the species is simply the form in which is presented the genus so actualized.

To establish a definition by means of division one must take care to admit only essential attributes, to order them correctly, and to omit none; the last condition will be fulfilled necessarily if the dichotomy conforms to the second requirement, and for the second one has only to see that each term as taken is implied by all those below it while they are not so implied by it. The first condition, however, requires the establishment of the genus; for the testing of the validity of a proposed genus the *Topics* (Book IV) furnish practical rules (*Anal. Post.* 97 A 23-B 6). Nevertheless, the method of discovering the genus to be confirmed by these tests remains to be given; although the definition is finally reached by dichotomy, the process of dichotomy involves a preliminary positing of the genus, and Aristotle finally returns to the method of search which is a collection of the similarities among generically identical but specifically different groups up to the point at which a single formula is reached, care being taken to avoid attributing to a single genus notions which are merely equivocal. The process, then, is from groups of individuals through species to the genus (*Anal. Post.* 97 B 7-39). That this collection, however, presupposes some knowledge of the universal sought is clear from the description of the method; the comparison of species within the genus (97 B 9-10) like the collection of attributes which extend beyond the species but not beyond the genus (96 A 24-34) requires knowledge of genus and species before the definitions have been established. The two movements are parts of a single process; the precedence of collection to deduction like the precedence of discovery to demonstration is a practical necessity resulting from the fact that τὰ γνωριμώτερα ἡμῖν are not

τὰ γνωριμώτερα τῇ φύσει and that the course of learning is from the former to the latter although the course of demonstration is the opposite (*Anal. Post.* 71 B 19-72 A 11).[51]

The essential nature and its definition are the ἀρχαί of all demonstration (cf. H. Maier, *Syllogistik*, II, 1, p. 404, n. 2); the essence and the definition, however, cannot be demonstrated, and yet as the basis of all proof the principles must be better known than the propositions demonstrated by means

[51] Cf. *Physics* 184 A 16-23, *Metaphysics* 1029 B 4-12 In *Eth Nic* 1095 A 30-B 4 Aristotle emphasizes the difference between οἱ ἀπὸ τῶν ἀρχῶν λόγοι καὶ οἱ ἐπὶ τὰς ἀρχάς and remarks εὖ γὰρ καὶ ὁ Πλάτων ἠπόρει τοῦτο καὶ ἐζήτει, πότερον ἀπὸ τῶν ἀρχῶν ἢ ἐπὶ τὰς ἀρχάς ἐστιν ἡ ὁδός, ὥσπερ ἐν τῷ σταδίῳ ἀπὸ τῶν ἀθλοθετῶν ἐπὶ τὸ πέρας ἢ ἀνάπαλιν The πέρας here is the καμπή (cf. Burnet, *The Ethics of Aristotle*, p 17 and Plato, *Phaedo* 72 B), and the figure points out the connection between the two methods of συναγωγή and διαίρεσις for which cf *Phaedrus* 265 D-E Proclus (*In Primum Euclidis Elem Librum Comment*, ed Friedlein, p. 211) offers a commentary on this passage· μέθοδοι δὲ δύο παραδίδονται, καλλίστη μὲν ἡ διὰ τῆς ἀναλύσεως ἐπ' ἀρχὴν ὁμολογουμένην ἀνάγουσα τὸ ζητούμενον, ἣν καὶ ὁ Πλάτων ὡς φασὶν Λεωδάμαντι παραδέδωκεν, ἀφ' ἧς καὶ ἐκεῖνος πολλῶν κατὰ γεωμετρίαν εὑρετὴς ἱστόρηται γενέσθαι δευτέρα δὲ ἡ διαιρετική, κατ' ἄρθρα μὲν διαιροῦσα τὸ προκείμενον γένος, ἀφορμὴν δὲ τῇ ἀποδείξει παρεχομένη διὰ τῆς τῶν ἄλλων ἀναιρέσεως τῆς τοῦ προκειμένου κατασκευῆς, ἣν καὶ αὐτὴν ὁ Πλάτων ἐξύμνησεν ὡς πάσαις ταῖς ἐπιστήμαις ἐπίκουρον γινομένην (cf. *Philebus* 16 C) The designation ἀνάλυσις for the first method had its origin in mathematical procedure (cf. B. Einarson, "Mathematical Terms in Aristotle's Logic," *A. J. P.*, LVII [1936], pp. 36-39); its identity with the συναγωγή of Platonic dialectic is shown by a comparison with the following passages in the dialogues·—*Phaedrus* 265 D. εἰς μίαν τε ἰδέαν συνορῶντα ἄγειν τὰ πολλαχῇ διεσπαρμένα ἵνα ἕκαστον ὁριζόμενος δῆλον ποιῇ περὶ οὗ ἂν δεῖ διδάσκειν ἐθέλῃ *Republic* 533 C-D· ἡ διαλεκτικὴ μέθοδος μόνη ταύτῃ πορεύεται, τὰς ὑποθέσεις ἀναίρουσα (this is not the διὰ τῆς τῶν ἄλλων ἀναιρέσεως of Proclus, p 211, 25-27 which refers to the separating-off of the privative term in dichotomy; cf F Solmsen, *Die Entwicklung*, p 124, n. 1), ἐπὶ αὐτὴν τὴν ἀρχὴν . . . τὸ τῆς ψυχῆς ὄμμα ἕλκει καὶ ἀνάγει ἄνω. *Laws* 626 D: (after the Athenian has by a "collection" found that the ὅρος of well regulated cities, villages, households, and individuals is the same) τὸν γὰρ λόγον ἐπ' ἀρχὴν ὀρθῶς ἀναγαγὼν σαφέστερον ἐποίησας, ὥστε ῥᾷον ἀνευρήσεις ὅτι νυνδὴ ὑφ' ἡμῶν ὀρθῶς ἐρρήθη . .

Aristotle applies the remark of Plato to his own use by saying that, inasmuch as the starting point of the investigation must be τὰ γνώριμα and these are τὰ μὲν ἡμῖν τὰ δ' ἁπλῶς, the investigations of ethics must begin ἀπὸ τῶν ἡμῖν γνωρίμων; in the Platonic terminology this would be ἐπὶ τὰς ἀρχὰς ὁδός Cf *Topics* 141 B 5-14: ἁπλῶς μὲν οὖν γνωριμώτερον τὸ πρότερον τοῦ ὑστέρου, οἷον στιγμὴ γραμμῆς . . ἡμῖν δ' ἀνάπαλιν ἐνίοτε συμβαίνει· μάλιστα γὰρ τὸ στερεὸν ὑπὸ τὴν αἴσθησιν πίπτει, κτλ.

of them (*Anal. Post.* 72 A 25-B 4). This raises a difficulty in connection with which Aristotle considers two opposite theories concerning knowledge. There are, he says, some who deny the possibility of knowledge on the grounds that the posterior cannot be known through the prior unless there is a primary to prevent an infinite regress, whereas if the series has an end the first principles cannot be known since they cannot be demonstrated—demonstration being the only form of knowledge—and, if the principles cannot be known, what follows from them cannot be really known but must depend upon the mere assumption that the principles are true. The second group admits that knowledge can arise only by means of demonstration but argues that nothing prevents demonstration of everything, for there can be circular demonstration of things from one another. To the first of these theories Aristotle gives no direct refutation here; he agrees that the proof of posterior through prior requires a primary term (72 B 10) and states his own doctrine that not all knowledge is demonstrative. Since the prior elements from which demonstration proceeds must be known and since there cannot be an infinite regress, these immediate elements, having nothing prior to them (cf. 72 A 8), must be indemonstrable. There is, then, besides knowledge a source of knowledge whereby we recognize the definitions. The second position, however, he refutes at some length by arguing that; since demonstration must proceed from the prior and better known, circular demonstration is impossible, for the same things cannot be at once prior and posterior to the same things. (Although what is naturally prior may be for us posterior and induction does proceed to this from the naturally posterior which is prior for us, this process is not demonstration. By this remark Aristotle anticipates the argument that A may be "proved" inductively from B while B is demonstrated from A.) Furthermore, circular demonstration reduces to the tautology, "since A is, A is"; and even so such a demonstration is possible only in the case of convertible terms; such cases are rare in demonstrations so that it is impossible to argue that all things can be demonstrated by this method.

Anal. Post. 72 B 5-73 A 20

Both of the positions here opposed have been called "in all

probability Academic" (F. Solmsen, *Die Entwicklung*, p. 106). The first appears in Sextus' attack on demonstration (*Adv. Math.*, VIII, 347) and has been attributed to Carneades (Zeller, *Phil. Griech.*, III, 1, p. 522, n. 2). Theophrastus in criticizing Plato's account of the *psychogonia* objected that to look for the genesis of the self-substantial is to overturn all existence "just as he who once believes that everything is to be demonstrated destroys demonstration itself" (Proclus, *In Timaeum*, II, p. 120, 9-22 [Diehl]); elsewhere he refers to those who destroy reason and knowledge by seeking a reason for everything (Theophrastus, *Metaphysics* 9 B 21-24). There is no likelihood that such an attitude was restricted to a single group or school; anyone who was inclined to scepticism would be likely to maintain it as is shown by its reappearance in the work of Sextus. Nevertheless, Aristotle frequently refers to it as the basis upon which a certain group refused to admit the law of contradiction (*Metaphysics* 1006 A 5-11, 1011 A 7-20, 1063 B 7-14, 1012 A 20-24), and this refusal he attributes specifically to Antisthenes and his followers (*Metaphysics* 1024 B 31-34 [note the connection here with the denial of the possibility of definition; the statement of 1012 A 21-24 refers to the same connection, cf. 1043 B 23-28], *Topics* 104 B 20-21). As in the present passage no real refutation of this view is given, so where reference is made to it elsewhere Aristotle says that it is impossible to reason with those who will not allow the assumption of something that does not require demonstration (*Metaphysics* 1063 B 7-12, cf. 1006 A 11-25). Consequently, although Aristotle's own distinction between those who, having honestly but mistakenly come to hold this opinion, can be shown the error of it and those who stubbornly maintain it in the face of all persuasion (*Metaphysics* 1011 A 13-16, 1012 A 17-21, 1009 A 15-22) indicates that the thesis was not the monopoly of one group, we can hardly avoid the conclusion that Antisthenes and his followers were chiefly in Aristotle's mind in *Anal. Post.* A, chap. 3. Solmsen's belief that the argument there was brought forward by an Academic sect arises from the fact that it takes into consideration a termination of the series in primary ἀρχαί and insists that these being primary cannot be demonstrated, consequently cannot be known, and so cannot make known what

is posterior to them (F. Solmsen, *Die Entwicklung*, p. 106, n 1); there is, however, every reason to believe that Antisthenes in his polemics against Plato would have tried to build his refutation upon the assumptions of Plato himself (cf. Zeller, *Phil. Griech.*, II, 1, p 291, n. 2), and Plato's *Parmenides* (133 B-C, 134 B, 135 A) shows that he had opponents who attacked the theory of ideas as an explanation of knowledge by arguing that, even if the ideas exist, these ἀρχαί of knowledge must themselves be unknowable (cf the remarks of Antisthenes, Zeller, *Phil. Griech.*, II, 1, p. 295, n. 2). The mistake of making no distinction between the ἀρχή and τὰ ἐξ ἐκείνης ὡρμημένα is attributed in the *Phaedo* (101 E) to οἱ ἀντιλογικοί, so that this particular argument against the possibility of demonstrative knowledge must have been used against Plato's theory itself and was not the result of what Solmsen considers "the logical scandal" discovered by Plato when he denied the autonomy of the principles of mathematical science (F. Solmsen, *Die Entwicklung*, pp. 105-106).

Neither Plato nor Aristotle could meet the objection with a true demonstration; they could only show (ἀποδεῖξαι ἐλεγκτικῶς as Aristotle puts it, *Metaphysics* 1006 A 12) that if there is to be knowledge at all there must be principles of knowledge which are not demonstrable (cf. *Parmenides* 135 B-C).[62] That

[62] Solmsen argues that Plato in the *Phaedrus* (245 C 5 ff.) tries to demonstrate the ἀρχὴ ἀποδείξεως and that this attempt "sich . . . neben die beiden anderen akademischen Theorien stellt, welche die Resp VI 510 f aufgedeckte Unbewiesenheit der apodeiktischen ἀρχαί überwinden wollen und von Aristoteles bekampft werden" (*Die Entwicklung*, p 292) In the *Republic*, however, Plato says only that mathematics uses ὑποθέσεις *as if they were* ἀρχαί whereas dialectic is not satisfied until it reaches an ἀρχὴ ἀνυπόθετος. (The difference lies in the methods, not in the objects of the two disciplines as 511 D shows: . . . αἷς [*scil.* τέχναις] αἱ ὑποθέσεις ἀρχαὶ καὶ διανοίᾳ μὲν ἀναγκάζονται ἀλλὰ μὴ αἰσθήσεσιν αὐτὰ θεᾶσθαι οἱ θεώμενοι, διὰ δὲ τὸ μὴ ἐπ' ἀρχὴν ἀνελθόντες σκοπεῖν, ἀλλ' ἐξ ὑποθέσεων, νοῦν οὐκ ἴσχειν περὶ αὐτὰ δοκοῦσί σοι, καίτοι νοητῶν ὄντων μετὰ ἀρχῆς Cf Shorey, *ad loc.*, *Republic* [Loeb Class. Lib.], vol II, p 116) Any true ἀρχή is ultimate, the principles employed by mathematics are simply not ἀρχαί at all. It is, therefore, a self-contradiction to say that Plato tries to demonstrate an ἀρχὴ ἀποδείξεως by means of τῶν ὑποθέσεων ἀνωτέρω ἐκβαίνειν, for that is the means of reaching an ἀρχή (*Republic* 511 A), not of going beyond it to an ἀρχὴ τῆς ἀρχῆς. The *Phaedrus* passage in which, according to Solmsen, a demonstration of an ἀρχὴ ἀποδείξεως is contained itself states that any real

some group hoped to save knowledge by maintaining the validity of reciprocal demonstration indicates a surrender to the sceptical attack of the possibility of direct knowledge, a surrender incompatible with retention of the Platonic theory of ideas Where a distinction between the way of knowing the principles and the way of deducing knowledge from those principles is found there can be no room for such a doctrine as the second of the two that Aristotle here considers; but such a distinction, we know, was drawn by both Speusippus and Xenocrates, for the former differentiated between the *θεωρήματα* which require demonstration and the *ἀξιώματα* which the mind knows as it were by direct contact and which

ἀρχή is ultimate -*ἀρχὴ δὲ ἀγένητον ἐξ ἀρχῆς γὰρ ἀνάγκη πᾶν τὸ γιγνόμενον γίγνεσθαι, αὐτὴν δὲ μηδ' ἐξ ἑνὸς εἰ γὰρ ἔκ του ἀρχὴ γίγνοιτο οὐκ ἂν ἔτι ἀρχὴ γίγνοιτο* (*Phaedrus* 245 D) Although the application of this argument is physical, its validity lies in the meaning of the word *ἀρχή* (whatever is not ultimate is not an *ἀρχή*) and the necessity of a primary term in a series of prior and posterior The use of demonstration, therefore, to establish *ἀθάνατον* as a predicate of *τὸ ὑφ' ἑαυτοῦ κινούμενον* (245 C 5-C 2) does not mean that Plato is attempting to deduce the validity of a "principle of demonstration." That the soul is self-moving is discovered by diaeresis which *indicates* this characteristic of the soul (245 E 4 ff), what has been achieved by demonstration is merely the explication of *ἀθάνατον* as a necessary characteristic of *τὸ αὐτὸ ἑαυτὸ κινοῦν* Furthermore, the *ἀρχὴ ἀποδείξεως* of 245 C 4 is certainly *ψυχῆς φύσεως πέρι θείας τε καὶ ἀνθρωπίνης πάθη τε καὶ ἔργα* (*ἰδεῖν*) and so includes besides the "immortality of the soul" the doctrine of ideas, the theory of reminiscence, the whole "myth" (cf 249 D *ἔστι δὴ οὖν δεῦρο ὁ πᾶς ἥκων λόγος περὶ τῆς τετάρτης μανίας κτλ.*), so that it is unreasonable to take the phrase here as referring to *ψυχὴ πᾶσα ἀθάνατος* and then to argue that Plato proceeds to "demonstrate" the validity of this *ἀρχή* Inasmuch as this very passage treats the ideas as the ultimate *ἀρχαί* of knowledge to which reason in man attains by reminiscence (249 B-C) one would have to suppose that Plato was completely confused and hopelessly inconsistent if he here attempted to deduce or derive a real *ἀρχή*

On the other hand, Solmsen has himself pointed out (*Die Entwicklung*, p 43, n 1) that when Aristotle attempts to establish the characteristics "primary" and "indemonstrable" for the *ἀρχαί* of demonstration (71 B 26-33) his argument moves in a circle and approaches that of the second position which he opposes in chapter 3, for that demonstration proceeds from "primaries" is proved only from an essential attribute of demonstration itself—no *ἀπόδειξις* without *ἀπόδειξις*—which is not itself proved In *Anal Post* 81 A 29-B 9, after having demonstrated that the series of predication in ascent and descent contains a finite number of terms and that, therefore, the intermediates between any two terms are also limited, Aristotle adds that, in consequence of this, there

form the basis for all further knowledge (*frags.* 30, 46, 47 and Lang, *Speusippus,* pp. 28-30) while the latter intended a similar explanation by his two kinds of φρόνησις, one type of which he called ἐπιστήμη τῶν πρώτων αἰτίων and characterized as ὁριστικὴ καὶ θεωρητική (*frags.* 6 and 7, see note 14 and page 17 *supra*). Nevertheless, there is good evidence to show that Xenocrates thought it possible to give demonstrative proof of his definitions (cf *Topics* 152 A 5-30, 152 B 36-153 A 5), and Aristotle directly cites and criticizes him for attempting to demonstrate a definition by the use of convertible terms (*Anal. Post.* 91 A 35-B 11, see note 27 *supra*), his attempted circular proof of the axiom that everything must be good, bad, or indifferent (*frag.* 76), an attempt in which according to Sextus he stood alone, increases the likelihood that it was from the practice if not from an express doctrine of Xenocrates that the belief in universal demonstrability ἐξ ἀλλήλων took its rise. The use of circular demonstration to establish the basic assumptions of geometry to which Aristotle alludes in *Anal. Prior.* 64 B 39-65 A 9 and which he there criticizes in words the same as those used in this passage (cf. *Anal. Prior.* 65 A 7-9 and *Anal. Post.* 72 B 34-35) connects the tendency to use this method of conversion with an interest in mathematical principles and so points to the same *milieu.* In the absence of direct testimony, then, it is probable that the thesis which Aristotle here criticizes was that of certain followers of Xenocrates who had abandoned the last vestiges of the theory of ideas and therewith the objects of direct knowledge that served as the principles of demonstrative reason.

must be ἀρχαί of demonstration and that not everything can be demonstrated. The existence of ἀρχαί prevents both demonstration of all truths and an infinite regress, for if either of these were possible there would be no immediate, indivisible interval as there must be since the limitation in both directions puts a limit to the possible insertion of intermediate terms in the series. Of this "analytic proof" G. R. G. Mure says (*Oxford Translation,* note on 84 B 2). "The basis of Aristotle's contention is that predication is always a synthesis of determinate elements, a concrete whole which is essentially not ἄπειρον. Unfortunately for Aristotle's point this contention, however sound, involves the *reciprocal* interdependence of the elements of such a synthesis and, ultimately, of all the terms of a series of predication. It may prove that the series of predication cannot contain an infinity of terms, but it does not prove that it is terminated by self-evident ἀρχαί, true within their own four corners."

Since demonstration requires indemonstrable principles which are already known, a problem is raised which is rather epistemological than logical; but for Aristotle the solution is found in the relation of universal to particular and in the modes of knowledge appropriate to each. One may know the universal and so in a certain sense know the particulars because the particular knowledge is implicit in the knowledge of the universal although it is not yet actualized; so it is that one may know beforehand that every triangle has angles equal to two right angles, but that this particular figure inscribed in a semicircle has angles equal to two right angles one knows only when one sees that it is a triangle and as soon as one does see it. Only on this basis can one avoid the difficulty raised in the *Meno* (80 D-E), according to Aristotle.[53] This solution is essentially a distinction of two

Anal. Post. 71 A 17-B 8

[53] As a comparison with *Anal. Prior.* 67 A 21-22 shows, this statement is a tacit rejection of the Platonic solution of *ἀνάμνησις*

When in the essay on memory and recollection (*Parva Nat.* 451 A 20-25) Aristotle begins his distinction of these two notions by saying *οὔτε γὰρ μνήμης ἐστὶν ἀνάληψις ἡ ἀνάμνησις οὔτε λῆψις*, he is not directly concerned with Plato's theory *ὅτι ἡ μάθησις ἀνάμνησις*, but Freudenthal (*Rhein. Mus.*, XXIV [1869], p. 404) is wrong in asserting that there is no reference here to Plato at all. In *Philebus* 34 A-B Plato distinguishes *μνήμη* and *ἀνάμνησις* and calls the former *σωτηρία αἰσθήσεως*, i.e. continued retention of the contents of sensation (or intellection, cf. *ibid.* 34 B 10-11, *Theaetetus* 163 D-E). But *μνήμη*, which here amounts to the "state of mind" that retains the content (cf. *Laws* 964 E *παραδιδόναι τὰς αἰσθήσεις ταῖς μνήμαις*, Pseudo-Platonic *Definitions* 414 A *διάθεσις ψυχῆς φυλακτικὴ κτλ.*), is used for the abiding content itself when Plato comes to *ἀνάμνησις*, consciousness and its content thus being identified (cf. also *Cratylus* 437 B *ἡ μνήμη . . μηνύει ὅτι μονὴ ἐστιν ἐν τῇ ψυχῇ*). Of *ἀνάμνησις*, furthermore, two kinds are distinguished, the first of which is recovery by the soul itself of the experiences which the soul once had in conjunction with the body and the second of which is recovery of such content already held in memory once but lost. The second is designated by the words *ὅταν ἀπολέσασα μνήμην αὖθις ταύτην ἀναπολήσῃ πάλιν*, it is, then, *ἀνάληψις μνήμης* while the first is rather *λῆψις μνήμης*, where *μνήμη* is the content of a former experience as differentiated from the experience itself. Although Plato in this passage is interested only in the ordinary psychological meaning of memory and recollection which he desires to use in his argument concerning pleasure, the treatment is in perfect harmony with his theory of the recollection of the ideas, in the *Phaedo* (73 B-76 E) this theory is based upon the analysis of the psychology of *ἀνάμνησις* in general and is treated merely as a special case of that phenomenon (cf. Shorey, *Unity*, p. 43). Inasmuch as Aristotle's lengthy

senses of εἰδέναι, the knowledge of the universal being potential knowledge of the particular case actualized when the particular is recognized as coming under the universal. Plato had pointed out this ambiguity of εἰδέναι and had made a similar distinction between ἕξις and κτῆσις ἐπιστήμης (*Theaetetus* 198 C-199 C); but, significant as this distinction was for the solution of the logical fallacies to which Aristotle here alludes (71 A 31-33; Plato, *Euthydemus* 276 D-278 A; cf. Shorey, *De Platonis Idearum Doctrina*, pp. 15 ff.), Plato did not believe that it could resolve the real epistemological problem (*Theaetetus* 199 C-200 C). Aristotle, however, insists that his distinction explains how knowledge and ignorance with regard to the same thing are not incompatible and that there is neither excuse nor possibility for the theory of reminiscence of the ideas which Plato considered as the only solution of the difficulty. He refers expressly to the statement of the *Meno* ὅτι ἡ μάθησις ἀνάμνησις (*Meno* 81 C ff.) in the chapter on error in the *Prior Analytics*. He has just explained that we may be mistaken about a particular although we know the

Anal. Prior. 67 A 8-B 11

insistence in the previous chapter (*Parva Nat.* 449 B 9-30) upon the reference of memory to the past only and its difference in this respect from contemplation and thought is probably meant to contain an implicit refutation of Plato's theory of learning as recollection (so also Freudenthal, *loc. cit.*), since he returns to the consideration of these factors in this chapter and again distinguishes learning from recollection with the significant remark that the ἀρχή necessary for the latter is more extensive than that required for the former (*Parva Nat.* 451 A 25-B 10), it is unlikely that in criticizing Plato's remarks on ἀνάμνησις in general he did not intend at the same time to cast suspicion upon the special theory. The appearance in this chapter (451 B 18-20) of the three kinds of association leading to recollection which in the *Phaedo* (73 D-74 A) play such an important part in establishing the doctrine of reminiscence of the ideas increases the likelihood of this intention.

In fact the argument that when one first learns something or has an experience he neither recovers memory nor acquires it *ab initio*—because before this there was no memory to recover and memory cannot arise simultaneously with the experience—supports the denial that recollection is neither ἀνάληψις nor λῆψις μνήμης only if Aristotle is thinking of an opponent who made μάθησις a kind of ἀνάμνησις. In all other cases one could admit the order of priority maintained by Aristotle and still assert the original thesis. But even against Plato's particular ἀνάμνησις the argument is irrelevant, for that theory presupposes a latent μνήμη prior to all experience, so that Aristotle's ὅταν τὸ πρῶτον μάθῃ is a *petitio principii*.

universal under which it falls, so that it is possible to know and not to know the same thing in such a way that knowledge, being of the universal, and ignorance of the particular are not contrary to each other Then he says that there is nothing more than this to the doctrine of the *Meno,* for one never foreknows the particulars but gets knowledge of them simultaneously with induction—as it were by recognition, for as soon as we know that a particular falls under a universal (e g. is a triangle) we know certain things about it (e g. it has angles equal to two right angles). So in a sense by knowing the universal we know the particular but not by the knowledge proper to it, hence we can be mistaken concerning particulars without contradicting the knowledge we have of them implicit in our knowledge of the universal.

In this attempt to reduce the Platonic theory of reminiscence to his own doctrine of the recognition of the universal in the particular whereby the acquisition of particular knowledge is a concomitant of induction which itself leads from the particular to the universal (cf H Maier, *Syllogistik,* II, 1, p. 376, n. 2) Aristotle indicates at once his agreement with Plato as to the fundamental problem of epistemology and logic and the essential difference between Plato's solution and his own. Direct knowledge, taken by both to be the prerequisite of discursive thought, when it has for object subsistent ideas and functions only prior to psycho-physical experience wears a different complexion and plays a different part from what it does when such ideas are denied; inevitably the strict relationship of prior and posterior is then obliterated and the necessary intuition has to find its place somewhere within the psycho-physical experience itself which still depends upon the *faculty* of this intuition. Aristotle bears witness to the fact that for Plato the subsistence of the ideas was an epistemological necessity, for in the passages in which he explains the processes of knowledge his attitude toward the ideas is one of defense, his argument being that such existences are not necessary to account for the phenomena of intellect. For the ideas Aristotle substitutes the abstracted

universals, arguing that the latter suffice to fulfill the necessary functions for which the former were introduced. If there is to be demonstration, he says, it is necessary that it be possible truly to predicate one of many, for otherwise there will be no universal and so no middle term without which there is no demonstration; but the possibility of demonstration does not require the existence of ideas or that the single term predicable unequivocally of a multitude exist apart from the many of which it is predicated.

Anal. Post. 77 A 5 9

The nature of the arguments by which such an universal is substituted for the idea might lead one to reject universal demonstration in favor of particular, and Aristotle seeks to show that the objections to the ideas in no way militate against the superiority of universal proofs The objection might be made to universal demonstration that it creates the impression that it depends upon the existence of the universal apart from particulars and so deceives one into adopting the false doctrine of the separate subsistence of universals To this Aristotle replies that the universal exists not less but rather more than definite particulars, if it is a single definition and unequivocal, inasmuch as the particulars are perishable and universals are not, but that there is no necessity for supposing that it has *separate* existence for the reason that it signifies a unity any more than there is in the case of terms which indicate not substance but quality, relation, or action [51] To do so would be the fault of the person who heard the demonstration, not of the demonstration itself

Anal. Post. 85 A 31-B 3, 85 B 15-22

[51] In the course of demonstrating the finiteness of the series of predication (*Anal Post* A, chap 22) Aristotle lays it down (83 A 30 35) that predicates which do not signify substance must be predicated of a particular subject and that there cannot be anything which has a predicate in one of the adjectival categories that is not at the same time something other than this (e g anything that is white must be so being something else) In short, all that is not in the category of substance exists by inherence in a substrate (*cf Anal Post* 73 B 5-10). At this point he calls attention to the fact that this analysis is an implicit rejection of the theory of ideas they are mere babbling; and, even if they exist, they have nothing to do with the present discussion for demonstrations are concerned with terms predicated of a subject Even here the arguments against the ideas as such are not developed; Aristotle allows an expression of scorn for the whole theory to escape him, but quickly restrains himself to the relevant

The subsistence of the ideas and the theory of reminiscence enabled Plato to take for granted the necessary knowledge of the indemonstrable principles and to treat the intellectual processes as merely a mechanism for clarifying and organizing the material already present to the mind in a latent and confused condition. Once the instrumentality of ἀνάμνησις has been abandoned and the separately existing ideas no longer stand as the ultimate sources of existence and final reference points of thought (even should they exist, their usefulness for epistemology is destroyed once the doctrine of ἀνάμνησις is abandoned, and for this reason Aristotle, having rejected the latter, need not consider the former directly in *Anal. Post.* B, chap 19), since the possibility of discursive knowledge still depends upon the direct cognition of ultimate principles, the analysis of the logical processes is a structure without a basement until some means can be found to provide for this direct knowledge within the psycho-physical experience of the individual At the end of the *Posterior Analytics* Aristotle, therefore, tries to supply this foundation, emphasizing once more as he introduces the discussion the fact that the possibility of demonstration, the laws and processes of which the two *Analytics* have established (cf *Anal. Post.* 99 B 15-19), depends upon the knowledge of the primary and immediate ἀρχαί (99 B 20-22) [55] So at the end of

Anal. Post. 99 B 20-100 B 17

issue, namely that the ideas whether they exist or not have nothing to do with the process of demonstration Nevertheless, the priority of substance to the other categories and their dependence upon it for their existence (cf *Metaphysics* 1045 B 27 32, 1028 A 10-B 7, 1088 B 2 4) can be seen in this passage and in *Anal Post* 85 B 18-22 to impress him as a powerful argument against the existence of ideas

[55] Inasmuch as Aristotle holds that there are ultimate indemonstrable ἀρχαί peculiar to each science as well as ultimate ἀρχαί of all reality (cf *Anal. Post* 76 A 31-B 16 and H Maier, *Syllogistik*, II, 1, pp 400 403), both the principles of the various sciences and the ultimate concepts, i e the categories, must be included in the ἀρχαί here, and, as 100 A 15 B 5 seems to refer especially to the attainment of universal concepts (η b πάλιν ἐν τούτοις ἵσταται ἕως ἂν τὰ ἀμερῆ στῇ καὶ τὰ καθόλου, οἷον τοιονδὶ ζῷον ἕως ζῷον, καὶ ἐν τούτῳ ὡσαύτως), the mention of τέχνης ἀρχή as well as ἐπιστήμης (100 A 8 9), especially when compared with the example of the advance from ἐμπειρία to τέχνη in the parallel passage (*Metaphysics* 981 A 5-12), must be meant to indicate the basic principles of the sciences

The indemonstrability of the peculiar principles of each science is established

the *Posterior Analytics* he explains the manner in which that arises the existence of which at the beginning of this work he showed to be indispensable to demonstration (*Anal. Post.* 71 B 19-72 B 4). The knowledge of these ultimate principles might seem to be either innate states of which the subject is at first unaware or to be states which non-existent at first arise as the result of a process. But both suppositions are rejected. The first

as a consequence of the rule that true demonstration in any genus must proceed from the principles peculiar to that genus (*Anal Post* 76 A 13-15, 75 A 38-B 20). If the peculiar principles were demonstrable, they would have to be demonstrated from principles which are not peculiar to that science, but the knowledge of these principles, being prior, would then be knowledge of each particular science in a higher degree than the knowledge of the peculiar principles In that case, however, the propositions of the science would be demonstrable from principles not peculiar to it, but demonstration proper to one genus cannot be validly transferred to another (*Anal Post* 76 A 16-25) This passage, so far as I can see, speaks neither for nor against metaphysics; it merely says that from the more general principles the particular propositions of a science cannot be demonstrated and so neither can the peculiar principles of the science, cf *Anal. Post* 75 B 17-20 Inasmuch as it makes the peculiar ἀρχαί of the various sciences ultimate, however, it may have been meant as an argument against the Platonic dialectic to which these principles, ultimate for the sciences that proceed from them, are literally ὑποθέσεις the intelligibility of which it has to establish (Plato, *Republic* 511 C-D). The central thought of the whole context, however,—the impossibility of a transference of demonstration from one genus to another (*Anal Post.* 76 A 22-23, cf 75 A 38, 75 B 8-10)—, the clear implication that such a transference was adopted for sciences which were *not* subaltern one to the other (since transference in such a case would be possible, *Anal. Post.* 75 B 14-17, 76 A 9-15), and the criticism that the consequent proof could be only of accidental properties because it proceeded from characteristics *common* to several genera (75 B 19-20, 75 B 41-76 A 3, cf. 75 B 10-12), all these characteristics are reminiscent of the doctrine of Speusippus. He held that the knowledge of any part of reality is dependent upon exhaustive knowledge of all, i. e. for him there was but a single *science* (*Anal Post.* 97 A 6-22, see pages 59-61 *supra*), and therewith neglected the distinction between essential and accidental characteristics (cf 97 A 11-14), yet he introduced separate ἀρχαί for each different kind of substance (*Metaphysics* 1028 B 21-24, cf. Speusippus, *frags.* 33 a-e) The connection of these separate departments he found in their *common* characteristics so that the basis of his investigation was the knowledge of similarities (Diogenes Laertius, IV, 2 = Lang, *Speusippus*, I, b, 4 [p 51], *Metaphysics* 1085 A 32-33 ἡ δὲ στιγμὴ αὐτοῖς δοκεῖ εἶναι οὐχ ἓν ἀλλ' οἷον τὸ ἕν, cf. Ross, *Metaphysics*, II, pp 455 f. on 1085 A 13-14), and of the mind in its process of discursive thought from the principles grasped immediately to the objects of investigation he said κατὰ μετάβασιν ἐπ' ἐκεῖνα διαβαίνουσα κατὰ τὸ ἀκόλουθον

is absurd, for it would mean that one who has knowledge more accurate than demonstration can be unconscious of possessing it; the second is impossible, for without previously existing knowledge no process of discovery or learning can take place (cf. *Anal. Post.* 71 A 1-2) In the list of objections to the theory of the Platonists (*Metaphysics* A, chap. 9) the same dilemma is used to show that a science of the στοιχεῖα πάντων is impossible (992 B 24-993 A 2). These στοιχεῖα could not be *learned*, because one who proceeded to learn them could have no previous knowledge, for, whatever else one knows when one begins the study of any science, one cannot know the subject matter

αὐτῶν ἐπιχειρεῖ ποιεῖσθαι τὴν θήραν (*frag* 30) Such was his method of treating numbers, figures, and elements, an investigation of the ἰδιότης τ' αὐτῶν καὶ πρὸς ἄλληλα κοινότης, ἀναλογία τε καὶ ἀντακολουθία (*frag.* 4, Lang [pp. 53-4, lines 6-11]) The thesis refuted by Aristotle in *Anal Post* 88 B 23-29 seems to be a formulation (by Aristotle himself) of this doctrine He has tried to prove (88 A 18-B 8) that all syllogisms cannot have the same ἀρχαί He then considers what meaning could be attached to the statement that the ἀρχαί of all sciences are identical, it cannot mean that they are as ἀρχαί self-identical (88 B 10-15), nor can it mean that from all ἀρχαί taken together any of all possible conclusions can be drawn (88 B 15-21) There remains the possibility that, while there are different ἀρχαί for different sets of conclusions, the ἀρχαί of all are συγγενεῖς, a possibility which is invalidated by the proof that the ἀρχαί of things generically different are themselves generically different (88 B 23-29) —It must be noted that this whole chapter is considered by Solmsen (*Die Entwicklung*, pp 111-112) to be a polemic against "ein Platoniker (bzw Plato selbst)", the position attacked by Aristotle he further specifies as the oldest form of Platonic mathematics, "die 'Existenzableitung' aller mathematischen Objekte aus der gleichen höchsten οὐσία" This interpretation, however, depends upon the theory that Plato "reformed" mathematics in the direction of his own dialectic to the point where "true mathematics" and the dialectic became identical for him (against which notion cf Shorey, *Plato's Republic* [Loeb Class Lib], II, pp 169, note *f* and 202, note *b*) Nor does it seem possible to reconcile with such statements as *Topics* 153 A 8-11, *Anal Post* 90 B 31-33, *Metaphysics* 1064 A 2-10 the theory that mathematics "so radikal durchplatonisiert war, dass sie die οὐσία ihrer Objekte . aus einer einzigen ἀρχή, eben der μονάς ableitete" At any rate, there is no direct polemic in the chapter before 88 B 10 (unless 88 A 33 be an argument hinting at the opponent's theory of μονάδες and στιγμαί as two sets of principles, a view that could not be Plato's [cf *Metaphysics* 992 A 20-21] but would be the theory of Speusippus [*Metaphysics* 1085 A 32]), and in the subsequent paragraph of the three meanings suggested for the thesis which is attacked the first two are purely dialectical and only the last can represent a real theory

of that science; since, however, these would be the principles of everything, there is *nothing* that one who began to learn this science could know before learning it, and yet all learning proceeds from previously known principles. On the other hand, if this knowledge is innate, it is marvelous that we should be unconscious of possessing what would be the sovereign of the sciences. The criticism on the basis of which Plato's solution is rejected is in both cases the objection that unconscious knowledge is a contradiction in terms, but this in reality is proof only that *memory* of the principles continuous from birth is impossible and does not touch the essential character of the theory of reminiscence which is a projection into consciousness of knowledge previously latent. Plato himself had carefully distinguished memory and reminiscence in this very respect (*Philebus* 34 B) and had sought to explain the connection of physical birth with the recession from consciousness of the knowledge of the ideas (cf. *Phaedrus* 248 C: ὅταν . . . λήθης τε καὶ κακίας πλησθεῖσα βαρυνθῇ, βαρυνθεῖσα δὲ πτεροῤῥυήσῃ τε καὶ ἐπὶ τὴν γῆν πέσῃ . . ., *Phaedo* 75 D-76 D where the necessity of "forgetting the principles at birth" is proved, *Timaeus* 43 A-44 B where a "psycho-biological" explanation of this process of forgetting is given [cf. A. E. Taylor, *A Commentary on Plato's Timaeus*, p. 267]). In fact the distinction between ἕξις and κτῆσις ἐπιστήμης (*Theaetetus* 197 C-E) describes the relationship of the mind to the knowledge latent in it as a δύναμις; and, when the image in which this distinction is used has been corrected by the introduction of the ideas in the doctrine of the *Sophist*, this δύναμις correctly indicates the condition of the mind in respect to the objects of reminiscence (cf. Cornford, *Plato's Theory of Knowledge*, p. 317 and cf. *Politicus* 277 B: κινδυνεύει γὰρ ἡμῶν ἕκαστος οἷον ὄναρ εἰδὼς ἅπαντα πάντ' αὖ πάλιν ὥσπερ ὕπαρ ἀγνοεῖν [in saying which the Stranger refers to himself as κινήσας τὸ περὶ τῆς ἐπιστήμης πάθος ἐν ἡμῖν] and *Meno* 85 C: καὶ νῦν μέν γε αὐτῷ ὥσπερ ὄναρ ἄρτι ἀνακεκίνηνται αἱ δόξαι αὗται). So Plato had taken account of the necessary "unconsciousness" of the innate knowledge; and Aristotle's criticism of the theory of σύμφυτος ἐπιστήμη, in so far as it is meant to be a refutation of the Platonic theory of ἀνάμνησις, is simply an *ignoratio elenchi*. Aristotle's own solution is that, since the knowledge can neither exist in the subject from

the beginning nor arise without some such ἕξις as a previous condition, there must be present some δύναμις which is itself not higher in the scale of accuracy than the actual states of knowledge. Such an innate, discriminative faculty is found in all animals; it is sensation, and from it Aristotle seeks to derive the knowledge of the ἀρχαί by what seems to be a purely mechanistic explanation The persistence of sense-perceptions is memory, the repetition of memories of the same thing results in experience; and from experience, that is from the establishment in the soul of the universal as the one apart from the many particulars in all of which it inheres as one and the same,[58] comes the ἀρχή of art and science. This process is likened to order brought out of a battle rout when one man makes a stand

[58] Solmsen (*Die Entwicklung*, pp 84 f) takes the phrase τοῦ ἑνὸς παρὰ τὰ πολλά here (100 A 7) to indicate that the καθόλου "für die aristotelische Apodeiktik ursprünglich noch ganz platonisch ein χωριστόν und ein ἓν παρὰ τὰ πολλά mit Existenz sowohl innerhalb wie ausserhalb der Einzeldinge war" Apart from the formal difficulty, however, that in *Anal. Post.* 77 A 5-9 (Solmsen, *op cit.*, p 99, n 4, calls *Anal Post* B, chap 19 "sachlich durchaus zur Apodeiktik gehörigen") Aristotle argues for the existence of τὸ καθόλου at the same time as he rejects the ideas and ἕν τι παρὰ τὰ πολλά, the "existence of the universal separate from the particulars" occurs only in the mind, it is the "abstraction" in which the function of the intelligence consists and, inconsistent as it may be with other parts of Aristotle's system, does not indicate any "*Platonic* notion of a separately existing universal within the particular and apart from it" It is a notion which forms the very foundation of Aristotle's psychology In *De Anima* 431 B 20 432 A 14 the fact that there is no existence apart from sensible magnitudes is part of the argument for the theory that the intelligence and sensation are the forms of their objects without the matter Even sensation functions by abstracting the forms from sensible objects or, in other words, becoming the form without the matter (*De Anima* 424 A 18-24; cf 427 A 9). The universals are in the soul, the mind, being the objects of thought potentially, in thinking them actualizes them as immaterial (*De Anima* 417 B 23, 429 B 30 430 A 9, 431 B 12-17) In his essay περὶ ἰδεῶν Aristotle wrote that the Platonic argument from the objects of knowledge did not prove the existence of ideas but only that there are τινα παρὰ τὰ καθ' ἕκαστα and that τὰ κοινά (i e common predicates, cf *Metaphysics* 1040 B 21-30 and Διαιρέσεις Ἀριστοτέλους, § 64 [page 45 *supra*]) have this characteristic (*frag.* 187 = Alexander, *Metaph.*, p. 79, 15-19). Since it is the objective subsistence of the ideas against which Aristotle was arguing (*ibid*, p 79, 7-8), it is clear that he was purposely contrasting his sense of παρὰ τὰ καθ' ἕκαστα as "abstraction" and the implication of χωριστόν τι that it bore for the Platonists In *Metaphysics* 1040 B 26 27 he makes this certain by denying not that universals are παρὰ τὰ καθ' ἕκαστα but that they are παρὰ τὰ καθ' ἕκαστα χωρίς.

and one by one his fellows follow his example (cf. Waitz, *Aristotelis Organon*, II, p 431, H. Maier, *Syllogistik*, II, 1, p 414, n. 2). Even at this point, however, there is evidence that the process is not simply mechanical; the innate δύναμις which is the prerequisite of the ἕξις is not a mere potentiality but an active faculty of discrimination (99 B 35), and when Aristotle proceeds to his second and "clearer" account of the process (100 A 15) it appears that in the first step which is sensation there is already selective abstraction:[57] the object of one's perception is a particular but the content of that sensation is a universal. These first universals are the material for the further stages of abstraction which culminate in the highest universals. So it is sensation which imparts the material and induction by which the principles are reached, but the process is one of selection and presumes a faculty which can employ the material presented by sensation and which will be infallible. This is νοῦς by which the principles are intuited and which, consequently, is the ἀρχή of science as its objects are the ἀρχή of scientific knowledge. In this way Aristotle believes that he has avoided the necessity of assuming the separate existence in the mind of the states of knowledge necessary as the principles of discursive thought (100 A 10) The sense-data abstracted from the individual objects of perception are the material from which the intelligible forms are abstracted, the process continuing until the ultimate universals are reached; these can exist apart

[57] Sensation is itself capable of comparison, analysis, and synthesis (*De Anima* 426 B 8-15, 432 A 16, cf *De Motu Animal* 700 B 19-22, Rodier, *Traité de l'Ame*, II, pp 381-2), it provides the forms of sensible objects and it is from these that the intelligible forms are abstracted (*De Anima* 432 A 1-10) The material, therefore, which is provided by sensation is in a sense already καθόλου, but it is rather a confused whole or general characteristic than a definite universal (cf *Physics* 184 A 21-B 14 and Ross, *Aristotle's Physics*, pp 456 8), this is the distinction between πρῶτον ἐν τῇ ψυχῇ καθόλου (100 A 16) and τὰ ἀμερῆ καὶ τὰ καθόλου (100 B 2); cf. *Physics* 184 A 23 (διαιροῦσι ταῦτα) and 184 B 12 (διαιρεῖ εἰς τὰ καθ' ἕκαστα) The establishment of this πρῶτον καθόλου is, therefore, the work of sensation alone; the activity of νοῦς is necessary for every further stage of the induction as Maier says, but he is probably mistaken in extending its action to the first stage as well (*Syllogistik*, II, 1, p. 426 and n 2 [on p. 428]). The act of intuition, however, may sometimes be simultaneous with sensation and so transform immediately the result of the perception into a true reciprocal universal (*Anal. Post.* 88 A 12-17)

in the mind, in a sense, without having separate objective existence because the mind is such that it becomes these forms without their matter (cf., with *Anal. Post.* 100 A 13-14, *De Anima* 431 B 20-432 A 10) The possibility of this procedure is the crux of the theory and it is here that must be sought the difference between Aristotle's account and the mechanical abstraction described and rejected by Plato (*Phaedo* 96 B, cf *Philebus* 38 B-C) The νοῦς, its character and functions, is Aristotle's answer to Plato's objections to the inadequacy of the mechanistic psychology and therewith his refutation of Plato's insistence that only the theory of ideas and reminiscence can solve the problem of knowledge The question still remains, however, in how far the mere capacity for becoming the ἀρχαί resolves the riddle that all learning presupposes settled points of reference In assigning a discriminatory power to sensation itself Aristotle apparently believed that he had undermined one of Plato's reasons for insisting upon the autonomy of the intelligence and the impossibility of "deriving" the ultimate universals from sense data (cf. *De Anima* 426 B 8-15, 425 B 20-22 with Plato, *Theaetetus* 186 B ff); still, in attributing to sensation a capacity to this extent like that assigned to νοῦς the pertinency of the fundamental question is extended from the latter to the former The process of abstraction depends upon a directive force and a point of reference, it is difficult to see how these can be results of the process itself or even concomitants of it. In solving the riddle of Meno and the possibility of particular ignorance Aristotle has used the theory of the "recognition" of the universal in the particular, so that the actualization of particular knowledge ought to presuppose actual knowledge of the universal (see pages 69-71 *supra* and *Metaphysics* 981 A 21-24, where, presumably by instruction, knowledge of the universal has been gained *without* abstraction), to say that knowledge of the particular is gained simultaneously with induction of the universal (*Anal. Priot.* 67 A 22-26) only introduces the difficulty in another form, for the infallible faculty which performs this function has simultaneously to range the particular under its proper universal and to extract the universal from the particular. Meno's question, therefore, rises again with regard to the activity of the νοῦς

which has somehow to handle the material provided it by sensation according to standards that result from the manipulation [88] If, to use Aristotle's other metaphor, it is said that the νοῦς becomes actually the objects that it was potentially, Aristotle's own theory of actualization demands that this potential existence be derived from a prior actuality and that the actualization be produced by the agency of *actually* existing universals outside of the νοῦς (see pages 468-470 *infra*)

In short, the actualization of the universals in the νοῦς resolves into a projection into consciousness of knowledge latent in the soul, and this latency, this potentiality, requires an explanation other than the process of its actualization That Aristotle was not unaware of this and that he could find no solution for it appear from his admission that the νοῦς enters "from the outside." The foundation of his explanation is, consequently, ἄλογον; his only defense could be that he has confined it ἔξω τοῦ μυθεύματος.

From the passages thus far considered there emerge certain definite general tendencies of Aristotle's critical method as applied to the theories of the Academy. Essential distinctions among various Academic theories are likely to be disregarded, and a criticism pertinent to one form of a given doctrine may be applied to all of its variations and phases (see pages 46-48, 60 *supra*), on the other hand, one form of a theory may be criticized in the light of some transformation which it subsequently underwent or of some essentially different theory which Aristotle, nevertheless, feels is but "another way of saying the same thing," or one form may be played off against another in such a way as to give the impression that an inconsistency has been discovered within a single theory (see pages 16-17, 19 *supra*); and, finally, a doctrine may be attacked in a form which is the result of Aristotle's own interpretation and reformulation (see pages 52-54 *supra*). The habit of neglecting to attach to the views which he criticizes the names of their proponents not only increases the difficulty of segregating the details and of

[88] The same circularity characterizes the practical method of "discovering" definitions where it is also the lack of a given point of reference that underlies the difficulty (see page 62 *supra*).

determining the validity of the criticism but also gives the impression that Aristotle is not so much interested in the accurate presentation and specific criticism of the theories of particular philosophers as he is in finding what he considers to be the conscious or even unconscious motives for the general philosophical attitudes which he thinks these views represent and in refuting the necessary consequences to which he is convinced that such general principles must lead For example, his contention that diaeresis does not demonstrate is so worded as to imply that all who had ever used the method regarded it in a single fashion (*Anal. Prior.* 46 A 34-37). Yet we have seen that there were different forms of diaeresis and different interpretations of the method within the Academy. Aristotle himself takes cognizance of what must have been variations, although he refers to them all as if they were but a single method Consequently, when he says that all those who had used the method proceeded upon the assumption that essential nature can be demonstrated, we may not exclude the possibility that he is extending the belief of one group indiscriminately to all the Academy or even ascribing to all a theory which he felt to be implicit in the practice of some. It is, at any rate, certain that the method must have meant something quite different to Speusippus who had abandoned the theory of ideas from what it did to Plato who held that theory

For the subsequent chapters the most significant feature of Aristotle's criticism of the "logic" and "method" of the Academy is the way in which the theory of ideas or, more generally, the theory of the "separate existence" of the formal determinant, is attacked The general method of attack consists in equating the idea with "formal cause" (cf. *Metaphysics* 988 A 34-B 6) and then subjecting it to a logical analysis in accordance with the Aristotelian requirements of form and matter. The idea is treated as if it were itself meant to play the part of immanent form; this enables Aristotle to analyze it into essential and existential moments and then to confront the one with the requirements of the other, to argue that the idea as at once transcendent and immanent is a self-contradiction The reason for treating the idea as immanent form is simply that Aristotle can find nothing else in Academic theory

to correspond to this element in his own system; but once the relationships of such an element are attributed to the idea its original characteristics naturally become incompatible with the new rôle it has to play. Moreover, such an interpretation results in confusing the relationship between ideas and phenomena with that among the ideas themselves, a confusion of which indications have been seen already in Aristotle's treatment of "intercommunication" of ideas as identical in nature with the "participation" of phenomena in the ideas (see note 35 *supra*) The incompatibility of the theory of ideas and the method of division is developed by means of the same technique. The transcendent idea is shown to be incapable of fulfilling the rôle of genus in a division because it would have to possess at once contrary properties A unitary genus is incompatible with definition (see pages 5-8 *supra*); since Aristotle represents the idea as the subject of a definition, one transcendent form is forced to appear as the material substrate which is formalized by some other idea. Thus diaeresis becomes the analysis of a complex concept into genus and differentiae. This analysis into generic matter and formalizing differentia is for Aristotle the only possible explanation of the unity of definition and essence; but it is at the same time a refutation of the theory of ideas, for the idea as a "complex concept" analyzed into elements which are themselves subsistent ideas loses its unity. The theory of ideas would, therefore, make impossible diaeretical definition and the unity of essential nature Whatever the philosophical value of this criticism may be, it is shown to misrepresent the Platonic conception of the ideas by the fact that once the analysis has been completed Aristotle himself confesses that he does not understand the place and purpose of the ideas which he has interpreted as "complex concepts" (see pages 38-48 *supra*). That men do not exist by participation in the ideas of animal and bipedality but by participation in the idea of man does not move him to suspect that his analysis may have misrepresented the motivation and details of the theory of ideas; his analysis has left no place for the idea of man, and he therefore concludes both that such an idea is superfluous and meaningless and that the theory fails to explain the unity of essence resulting from the combination of animal and bipedality (*Metaphysics* 1045 A 14-22).

CHAPTER TWO

The Material Substrate

Aristotle develops his own theory of the physical principles by trying to find the necessary elements already implicit in the doctrines of earlier thinkers who were "constrained by the truth" to assume principles the reason for which they did not understand (cf *Physics* 188 B 27-30) The violence which is required to extract from the Presocratic systems his notions of contrariety and material substrate (cf. *Cat. Pres. Phil*, pp 49-50, 53-56) is of consequence here only in so far as it serves as a warning not to expect a merely historical report of Plato's doctrine which is mentioned in the same context The condensation-rarefaction mechanism, in which Aristotle recognizes a foreshadowing of his principle of contrariety, he designates as a type of excess and deficiency just as is that which Plato calls τὸ μέγα καὶ τὸ μικρόν The difference is that Plato makes these the matter and τὸ ἕν the form, while condensation and rarefaction are themselves differentiae or forms of a unitary substrate. The choice of the contraries by previous thinkers is later said to differ according to the "universality" of these principles τὸ μέγα καὶ τὸ μικρόν is more universal and so logically more intelligible, while the dense and the rare, being particular, are better known to sense (*Physics* 189 A 2-9). So Aristotle discovers the contraries in the doctrines of his predecessors, after his interpretation of the Presocratics has elicited the notion of a unitary substrate also, he can say (*Physics* 189 B 11-16) that the opinion is old according to which the principles of existing things are the one and the pair, excess and deficiency, though the ancient thinkers made the pair the active principle and the unit passive while some of the later ones (i e Platonists) say rather that the unit is active and the pair passive

Physics 187 A 16-20

After Aristotle has set forth his own doctrine of substrate, form, and privation, which is merely the correct explication of the triad found implicit in previous physical systems and which alone will solve the difficulties that drove the Eleatics to deny change and plurality, he turns to the Platonists (the identification is assured by a comparison of 192 A 6-8 with 187 A 16-18) who, he admits, did perceive—though insufficiently—the nature of the substrate, recognition of which would have resolved at once the difficulties of the Eleatics. This section is not aporematic as were the previous references to Plato and the Presocratics; its purpose is not to draw out of earlier theories the elements of truth which are then reorganized to form Aristotle's own solution but to show that that solution now fully formulated is new and different from a doctrine the supporters of which might argue that it has all the virtues which Aristotle claims for his own exclusively. The motivation of the composition is similar to that in *Anal. Prior.* 46 A 31-B 37 where, after having formulated his own theory of syllogistic demonstration, Aristotle stresses its novelty and importance by showing that the task which it performs cannot be performed by the method of diaeresis, the one highly developed method of analysis then existing. The system of the Platonists, Aristotle admits, represents an advance in that the necessity for a substrate of physical process is recognized; but their conception of this substrate involves two mistakes: they admit that absolute genesis is from non-being and in so far admit the argument of Parmenides, and again they think that this substrate, since it is numerically one, is essentially one. By the second of these two errors Aristotle indicates that the Platonists overlook the difference between matter as persistent substrate and matter as privation, a distinction which enables him to regard the former as only accidentally non-being and as almost substance while the latter is essentially non-being. The first error he must have considered to be a result of the failure to make this distinction without which it was necessary to accept the exclusiveness of Parmenides' alternatives, "either being or non-being" (cf. Parmenides, *frag.* 8, 16 and Simplicius, *Phys.*, p. 243, 23-24,

Physics 191 B 35-192 A 34

Themistius, *Phys*, p. 32, 4-14), and so to come to the conclusion that the substrate, since it cannot be being without abolishing plurality and becoming, must be non-being. Since the Platonists identify "the great and the small," either both together or severally, with non-being, their triad differs from Aristotle's, according to his own notion, in being conceived as a single pair of contraries. To posit a dyad and call it "great and small" does not circumvent the difficulty, the phase of privation has still been neglected, for there is one phase of matter which persists and, like a mother, cooperates with the form in producing the result of generation but there is another phase of the contrariety which might, in view of its destructive character, appear not to exist at all This distinction enables matter to be considered as naturally desiring the form which is the good without the implication that one term of a pair of contraries strives for its own destruction, an absurdity which the Platonists cannot escape because their neglect of privation forces them to consider the unitary material substrate as the contrary of the form It is rather privation which is the contrary of the form, and the form is desired by the matter which is only *per accidens* this privation—not by the form itself or its contrary Consequently the substrate, as that in which the privation resides, passes away, but, as potency, it is essentially eternal, since its becoming and passing away would require its own nature in the one case to precede its coming to be and in the other to outlast its destruction

The substrate which Aristotle here calls "the great and the small" and attributes to Plato by name (187 A 17) is "matter," the substrate of phenomenal existence, and is equated with his own ὕλη and with the material principles of the Presocratics That it is the same as the "receptacle" of the *Timaeus* Aristotle clearly indicates by his reference (192 A 13-14) to the figure of *Timaeus* 50 D as evidence that the element of privation was neglected in the theory which he is criticizing; to this extent at least we possess the source of Aristotle's report and the object of his criticism and are justified in testing his statement by it. It will not do to plead that this reference to the *Timaeus* does not allow us to judge the rest of the chapter by

that dialogue, for, unless Aristotle held that the substrate referred to as δυάς was essentially the same as that described in the *Timaeus*, his appeal to the latter would in no way support his statement that he who designated the substrate as δυάς still neglected the phase of privation First, however, it is important to notice that in 187 A 16-20 and again in 189 A 8 Aristotle interprets the Platonic "matter," "the great and the small," as a pair of contraries, whereas the whole criticism of 191 B 35-192 A 34 is directed to show that this same substrate is for the Platonists a logical and numerical unity. The reason for the contradiction is apparent: in the earlier section he is trying to find a pair of contraries among the physical principles of all his predecessors and in the attempt goes so far as to attribute such a notion even to Parmenides (188 A 20, cf. *Crit. Pres. Phil*, p 48, n. 192); similarly when he tries to prove that a *triad* of principles was common in earlier theories the passive principle of the Platonists is τὰ δύο (189 B 11-18), but in the last chapter he is arguing that his own notion of matter as a logical duality of substrate and privation has not been anticipated The interested motives for both contradictory interpretations being thus equally clear, there can be no excuse on the evidence of the first book of the *Physics* to prefer either one to the other. Apart from this inconsistency, Aristotle in these passages testifies more or less directly that Plato called the material principle "the great and the small," that he identified it with non-being, and that for this principle the word "dyad" was used.[50] The

[50] The connection of *Physics* 192 A 11-12 with the following sentence which purports to prove from the *Timaeus* that the designation δυάς still takes no account of privation requires that τις (192 A 11) refer to Plato Robin (*Idees et Nombres*, note 261, pp 635-660) has collected and discussed the texts in which the designations, "the great and the small," "dyad," "the unequal," "unequal dyad," "indefinite dyad," "the infinite," "multiplicity," "the much and little," "the other," seem to be used by Aristotle of the material principle of Plato or the Platonists, and his general conclusions are that Plato took for the material principle "the great and small" which he considered to be a pair or dyad and frequently called by the name "the unequal" and that he insisted upon the relative and indeterminate nature or "infinity" of this principle, further that he probably used for it the phrase "indefinite dyad" which phrase both Speusippus and Xenocrates inherited from him These conclusions Ross (*Aristotle's Metaphysics*, II, pp. 434-435) apparently accepts. Apart from the

great and the small is called by Aristotle a species of the general principle of "excess and deficiency" or "more and less" under which he ranges the principles of contrariety that he attributes to all the earlier thinkers (187 A 16-17, 189 B 8-16), it is implicitly identified in this passage (192 A 11-14) with the "receptacle" of the *Timaeus* and the identification is explicitly attributed to Plato himself later (*Physics* 209 B 35-210 A 2, cf. 209 B 11-16, pages 120-121 *infra*), while the identification of the complex "great and small" with τὸ ἄπειρον is said to have been a peculiar feature of Plato's theory (*Physics* 203 A 15-16 and *Metaphysics* 987 B 25-27). Now the principle called τὸ ἄπειρον in the *Philebus* (24 A-26 D), which *might* be equated with the "receptacle" of the *Timaeus* (cf. Shorey, *Unity*, p 64; R G Bury, *The Philebus of Plato*, pp xlv-xlvii; Grube, *Plato's Thought*, pp 45-47, 301-304), is exemplified by such pairs of terms as μᾶλλόν τε καὶ ἧττον, τὸ πλέον καὶ τὸ ἔλαττον, μεῖζον καὶ σμικρότερον, all of which are particular manifestations of it We have, then, in the combination of the *Philebus* and the *Timaeus* an indication of the basis of Aristotle's remarks about "the great and small." Plato may possibly have used this phrase of the permanent substrate of generation in his conversations; the *Philebus* gives us first-hand evidence of the meaning he would attach to it It would not be surprising to find that as a single term for such a notion as "the great and small" he had used the word "dyad", but it does not occur in this sense in the dialogues, and there is a strange circumstance about its introduction into this passage of the *Physics*. The contention that calling the substrate a "dyad" does not avoid the criticism that has just been expressed—the proof that for the Platonists the substrate is a unit—and the substantiation of this contention by urging that the persistent substrate of the *Timaeus* shows that "he overlooked the other phase," all this has the air of a rejoinder to someone who had argued that Plato in using the term "dyad"

present passage, *Metaphysics* 987 B 25-27 comes nearest to attributing to Plato himself the use of the term δυάς, but even the passage before us need not mean that he used it as the *terminus technicus* for the "material principle" (see note 79 *infra*).

had anticipated Aristotle's objection The passage seems, then, to be part of a debate among Plato's pupils We have some evidence of such attempts on the part of Xenocrates to answer by interpretation of Plato certain of Aristotle's criticisms and of rejoinders to such attempts in the text of Aristotle (*De Caelo* 279 B 32-280 A 10 and Xenocrates, *frag.* 54; *Metaphysics* 1091 A 28-29 and [Alexander], *Metaph.*, pp. 819, 37-820, 7), since Xenocrates used the term "dyad" or "indefinite dyad" (Plutarch, *De An. Proc.* 1012 D-E; Ross, *Metaphysics*, note on 1088 B 28-30), he probably tried to find authority for it in the terminology of Plato and to defend it against Aristotle's criticism by arguing that the word itself showed that Plato had recognized two separate phases in the substrate (cf. Robin, *Idées et Nombres*, pp. 653-4, Ross, *Metaphysics*, I, p. lxi) Aristotle's admission of the term here is clearly a concession (*καὶ γὰρ εἰ . οὐθὲν ἧττον . .*), and the passage gives evidence that his arguments against Plato are, at least in part, arguments against the particular interpretations of Platonic doctrine espoused by his contemporaries in the Academy (see also note 79 *infra*).

Having established the unity of the Platonic substrate, Aristotle now argues that this involves the impossible consequence of a contrary striving for its own destruction That is, the Platonic substrate and form are now contraries (although previously the contrariety was found within the substrate itself) and, as contraries, are mutually destructive The same interpretation is used in the criticism of *Metaphysics* 1075 A 28-34 where Aristotle contends that all previous philosophers "make everything from contraries" and objects that, apart from the fact that some things are not generated at all, even those in which contraries are present cannot be explained simply as the products of contraries, for contraries do not directly affect each other This difficulty for him is solved by the notion of substrate as a third term; others use the notion of substrate, to be sure, but they employ one of the contraries as matter, as do those who make "the unequal" matter for "the equal" or "the many" matter for "the one",[80] the single matter of any pair of con-

[80] Aristotle has a polemical discussion of the contrariety *ἴσον—τὸ μέγα καὶ τὸ*

traries, however, is contrary to nothing (cf. Bonitz, *Metaphysica*, p 521) Similarly in *Metaphysics* 1087 A 29-B 6 Aristotle shows that the Platonists are no exception to his statement that all thinkers make the principles contraries (he is here arguing that no contrary can be a principle in the strict sense) by contending that, even though they recognized the necessity for a material substrate, they assigned this function to one of a pair of contraries. The shifts of interpretation to which Aristotle resorts in his attempt to reduce the "principles" of all the Presocratics to sets of contraries (cf. *Crit. Pres. Phil*, pp 47-

μικρόν in *Metaphysics* 1055 B 30-1056 B 2 where he argues that ἴσον is also the contrary of ἄνισον and considers the possibility (which may have been the contention of his opponents) that ἄνισον and τὸ μέγα καὶ τὸ μικρόν have the same significance, which, he says, supports those who call τὸ ἄνισον a dyad (see note 79 *infra*) By those who use the contrariety, ἴσον—ἄνισον, therefore, he probably means to indicate Plato and certain of his followers In a fragment of Hermodorus (Simplicius, *Phys*, p 248, 2-18) ἄνισον as an example of τὸ μᾶλλον καὶ τὸ ἧττον is opposed to τὸ ἴσον, and this is supported by the *Philebus* (25 A) where "the things that are compatible with τὸ ἴσον καὶ ἰσότητα" are put into the class of the πέρας and are opposed to those that admit of μᾶλλόν τε καὶ ἧττον, etc which fall into the class of the ἄπειρον.

The contrariety ἓν—πολλά Aristotle criticizes in *Metaphysics* 1056 B 3-1057 A 17 just after his discussion of the contrariety of the "equal" and the "great and small", the two were announced together at 1055 B 31-32 as if they were somehow related principles The pair ἓν –πολλά is apparently the same as the more frequently mentioned ἓν πλῆθος, for πλῆθος is referred to as a principle alternative to ἄνισον and μέγα καὶ μικρόν in *Metaphysics* 1091 B 30 32, 1092 A 29, 1092 A 35 B 2 The identification of τὰ πολλά and πλῆθος in this sense is further supported by the fact that in the passage before us Aristotle concludes by showing (1057 A 12-17) that πλῆθος is strictly contrary neither to ὀλίγον nor to ἓν A comparison of 1091 B 32-35 with 1072 B 30-34 has convinced most students that the pair ἓν—πλῆθος was used particularly by Speusippus (cf Robin, *Idees et Nombres*, pp 654 6, Ross, *Metaphysics*, II, p 455) [Alexander], *Aletaph*, p 823, 12 specifically names him as the person referred to in 1091 B 32-35, and, although elsewhere he attributes the principle πλῆθος to the Pythagoreans (pp 796, 32-33, 780, 15-17) and even to Pythagoras (p 797, 9), this may have been due to the authority of Speusippus himself who tried to emphasize the Pythagorean origin of his doctrines (cf Speusippus, *frag.* 4) It is likely that Aristotle himself was influenced in his interpretation of the Pythagoreans by this tendency of Speusippus (cf *Crit Pres Phil*, pp 241, n 111, 390 392) The occurrence of the pair ἓν—πλῆθος in the Pythagorean table given in *Metaphysics* 986 A 22-26 may point to this influence, or, conversely, Speusippus may have emphasized this terminology because he *did* find it in his Pythagorean sources

60) would seem to justify a preliminary scepticism concerning the contraries that he discovers in the Platonic theory. It is noteworthy, in the first place, that both in the critical passages (e g. *Physics* 192 A 21-22, *Metaphysics* 1075 A 30-31, 1087 A 36-37) and in the constructive arguments (*Physics* 190 B 33-191 A 3, *Metaphysics* 1069 B 3-7) the necessity for a substrate as a third term, different from privation and so not contrary to form, is derived from the rule that contraries, while they are the terms of change, cannot themselves change and so cannot affect each other directly, for it is logically impossible that one contrary should abide the presence of the other. There must, therefore, be a *tertium quid* in which the change from contrary to contrary takes place because it is capable of becoming either term, which, furthermore, is possible only if it is in its own nature contrary to neither. This is the basis of Aristotle's theory of the substrate which is essentially being and accidentally non-being as that in which inheres privation that is contrary to form. This, however, is merely an abstract way of putting the general theory, in which form its origin in the logical theory of the subject-predicate relationship is obvious (cf *Crit. Pres. Phil*, pp. 75-76, 88-91) In specific application to physical problems, the particular privation itself becomes a form with positive significance for the shaping of the substrate (*Physics* 193 B 19-20 [cf Simplicius, *Phys.*, p. 280, 18-22], *De Generatione* 318 B 14-18, 329 B 24-32, *De Part. Animal.* 649 A 17-20); the absence of one substantial form implies of itself the opposite determination of the substrate (*Physics* 191 A 6-7; *Metaphysics* 1032 B 2-5, 1019 B 6-10 [Ross' text; cf. Alexander, *Metaph.*, pp. 391, 34-392, 18]) The contrariety of form and privation becomes thus a contrariety of form and form, with the substrate qualified by one or the other of these terms but identified with neither; and this is the explanation of change the ignorance of which Aristotle charges to the Platonists, who as a result, he says, must make the contrary strive for its own destruction. Yet the axiom that contraries are incompatible and will not abide each other, the ultimate basis for Aristotle's assumption of a substrate that is not contrary to form, is explicitly stated in the *Phaedo* (102 B-103 C), where the distinc-

tion between the subject that "partakes of the ideas" and the ideas themselves is made to show that the former can change from one contrary qualification to the other by the inherence of one contrary and the withdrawal of the other but the idea itself cannot become other than itself and so must recede before the advance of its contrary. With emphatic repetition Plato points out that, while a contrary itself can never become its contrary so that in this sense no genesis of contraries from each other is possible, contraries do arise from contraries in the sense that the subject which partakes of one form may partake of its contrary in turn (103 A-C), and he even goes on to distinguish between accidental and inseparable or essential predicates and to show that a subject, to the existence of which a given form is essential, cannot abide the presence of the contrary of that form but must cease to exist if that contrary form enters it (103 C-105 B). Here, then, is stated the rule of contraries on the basis of which Aristotle attacks the Platonic conception of "matter," and here is apparently the origin of Aristotle's doctrine of substrate, form, and privation. Certainly the author of the *Phaedo* shows as clearly as could be that he did not consider the "substrate" to be one term of a contrariety; and in establishing the formlessness of the "receptacle" in the *Timaeus* (50 D-51 A) Plato reveals that he is still true to this doctrine. If the receptacle had form of any kind itself, he argues, some of the forms that it would have to receive would be contrary to its own and it would be unable to accept them without distortion; it can assume the likeness of all the forms only if it is itself like none and so contrary to none, it never loses its own character, for it admits all the forms and never itself becomes any one of those that it receives (50 B). Aristotle's statement, moreover, that for the Platonists matter was one of a pair of contraries is not given in the *Physics* passage as a principle enunciated by them, it is clearly marked as one of the "necessary consequences" deduced by Aristotle himself from another feature of their doctrine (n. b *Physics* 192 A 19: τοῖς δὲ συμβαίνει . . . , cf. *Index Arist.* 713 B 38-43), from their failure, namely, to distinguish between matter and privation and their identification of the substrate, as a logical unity, with

non-being. The form (cf. 192 A 13 and 21) is being; since matter is a unitary notion for them and is non-being, form and matter are the contraries from which they derive everything.

This identification of Platonic matter with non-being is the fundamental premise of Aristotle's criticism here and is the more troublesome because in the *Timaeus*, on an appeal to which he rests part of his argument in this chapter, Plato represents the receptacle as an eternal, unchanging existence which gives to phenomena by their coming to be in it whatever claim to being they may have (*Timaeus* 50 B, 52 A-B, 52 C, cf. Shorey, *Unity*, p 38 and n 261; *A. J. P.*, X [1889], p. 68). To be sure, the "receptacle," the phenomena, and the ideas form three kinds which exist in three different ways (52 D), and Aristotle might have argued that the "receptacle," since it is different from the ideas, is therefore non-being in the sense of the *Sophist*, i. e "otherness," or non-being relative to the ideas But his whole criticism depends upon the contention that it was *absolute* non-being with which the Platonists identified matter, a conception with which Plato emphatically refuses to have any concern whatsoever (*Sophist* 258 E, cf. 238 C). Nevertheless, that in attributing to the Platonists being and non-being as ultimate ἀρχαί Aristotle had in mind Plato's *Sophist* is definitely proved by *Metaphysics* 1088 B 35-1089 A 6 where it is said that what chiefly misled the Platonists in their search for principles was the obsolete form in which they put the problem. They thought that all existing things would be one—i. e. absolute being—unless the objection of Parmenides were met by proving that τὸ μὴ ὄν exists, for thus only could a multiplicity of objects exist—from a combination of τὸ ὄν and ἄλλο τι The quotation here of the first line of *fragment* 7 of Parmenides shows certainly that Aristotle is referring to Plato's *Sophist* (cf. 237 A), where the Stranger says that it is necessary to show against Parmenides that non-being exists "in a way" (241 D), and, since Aristotle identifies this non-being with the "unequal" and the "indefinite dyad" of the Platonists (cf 1089 A 1: ἐπὶ ταύτας τὰς αἰτίας and 1088 B 28-35), it is clear that the non-being with which he identifies the material principle of the Platonists in the *Physics* he connects with the non-being established by

Plato against Parmenides in the *Sophist*. But this, as has been seen, Aristotle insists is *absolute* non-being, despite the fact that Plato with all emphasis explains that it is *not* the opposite of being but simply "otherness" (*Sophist* 257 B-259 B) of which he has proved the existence and that in this sense not only does non-being exist but being does not exist (257 A and cf. 241 D).

Aristotle himself, when he tries to show that the Atomists need not have posited the existence of non-being and of atomic magnitudes in order to meet the Eleatic thesis, asserts against the Eleatics Plato's argument that τὸ μὴ ὄν can exist as μὴ ὄν τι (*Physics* 187 A 3-6, cf. *Crit. Pres. Phil*, p 75, n. 303), how, then, in spite of this apparent recognition of Plato's meaning in the *Sophist*, could he have imputed to him the doctrine of the existence of non-being as such? This very passage gives a clue to the way in which he reached this interpretation, for to the argument against the Eleatics he adds (*Physics* 187 A 6-10) that it is absurd to say that all things will be one unless there is something besides αὐτὸ τὸ ὄν, for "being itself" can mean only "what a particular existent is" and so there is nothing to prevent a plurality of existing things This, however, is just what he considers the Platonists *not* to have meant by αὐτὸ τὸ ὄν In *Metaphysics* 1001 A 29-B 1 (cf 1001 A 9-12) he argues that the Platonists in positing "absolute being" and "absolute unity" fall back into the difficulties of Parmenides, for what is different from being does not exist, so that all things must be one and this must be being. In thus equating the Platonic idea of being and Parmenides' Being Aristotle has to make use of the ambiguity of τὸ ὄν (cf Ross, *Metaphysics*, I, p 245) and employ the principle τὸ ἕτερον τοῦ ὄντος οὐκ ἔστιν, the fallacy of which Plato had already demonstrated (*Sophist* 259 A);[61] but

[61] In *Metaphysics* 1030 A 25-26 Aristotle refers to certain people who say λογικῶς that τὸ μὴ ὄν is—not that it *is* absolutely, Aristotle adds, but that it is non-existent (cf Maier, *Syllogistik*, II, 2, p 311, n 1) If this is a reference to the *Sophist*, as Ross thinks (*Metaphysics*, II, p 171), the specific passage which Aristotle has in mind is probably *Sophist* 258 C οὕτω δὲ καὶ τὸ μὴ ὂν κατὰ ταὐτὸν ἦν τε καὶ ἔστι μὴ ὄν This does not, however, mean, as he interprets it, that absolute non being "*is* non existent" (cf 258 E 7 259 A 1, 238 C 8-10), τὸ μὴ ὄν is the "idea of difference," exemplified by the comparison with

the real significance of this passage for the comprehension of Aristotle's interpretation of Platonism is that, when taken together with his statement that the Platonists thought it necessary, in view of Parmenides' arguments, to posit non-being in order to account for the multiplicity of existing things (1088 B 35-1089 A 6), it shows the origin of the notion that Platonic matter must have been absolute non-being. Since Plato asserted the existence of the idea of being as an absolute and this idea—like all ideas—was a unity, and since he at the same time assumed some kind of substrate of plural material existence, this substrate as other than absolute being itself must have been absolute non-being.

So Aristotle's representation of the nature of Platonic matter in *Physics* A is a deduction from his conception of the nature of the Platonic form. That the Platonic ἓν of which he speaks in this book is the analogue of his own formal principle he leaves no room for doubt (*Physics* 187 A 18, 189 B 15, 192 A 13, 21), but each one of all the Platonic ideas may be the formal cause of generation (cf. *Metaphysics* 991 B 3-4 = 1080 A 2-3) just as any one form may play this rôle in Aristotle's system. Each idea being unique and a single unit (*Metaphysics* 987 B 18, 1086 B 27), Aristotle allows himself to call any one αὐτὸ ὅ ἐστιν; and, since he is here considering the problem of becoming in general, he speaks of *the* Platonic unit (i e the idea) as he speaks of *the* form. Whether the formal principle is one or many, he says, is a question for first philosophy and will be postponed to that study (*Physics* 192 A 34-B 1) In these circumstances to treat the Platonic ideas generally as *the* form is legitimate; Plato in his résumé of the three classes, ideas, space, phenomena, speaks in similar fashion of τὸ κατὰ ταὐτὰ εἶδος ἔχον (*Timaeus* 52 A). Nevertheless, this way of speaking is deceptive, especially since it is from the nature of the ideas that Aristotle deduces the character of Platonic "matter" To refer to the formal principle as τὸ ἕν gives the impression that this principle is a single idea and that that idea is *the One*; and that this misled Aristotle himself appears from

τὸ μὴ μέγα and τὸ μὴ καλόν, and the meaning is that it is what is other than "being" (cf 257 B 9 C 3).

the analysis above. He insists upon the essential unity of the Platonic matter in order to find in the Platonic system form and matter used as contraries; but, if he had not been able to assume that the formal principle was a unit, his reduction of matter to a single principle would not have forwarded his purpose. Yet in Plato's own account we have found the contrariety existing in the relationship of form to form and the explicit statement that the "substrate" is not contrary to any of the forms Similarly Aristotle's interpretation of Platonic matter as absolute non-being depends upon the assumption that the formal principle as absolute being is a unit, so that any substrate of plurality must be absolute non-being.[82] The μὴ ὄν

[82] Aristotle's characterization of matter as evil in the Platonic system is due to a similar identification of *the form* with *the good* In our passage of the *Physics* this characterization is not expressly given, but in proving that Plato neglected the distinction between the permanent phase of matter and the phase of privation Aristotle says that the former is the cause which cooperates with the form to produce what comes to be but that the other part of the contrariety (i e privation) might seem to one who fixes his attention upon its maleficence not to exist at all (192 A 13-16) He then says that his distinction enables him to have matter desire "the divine and the good" (i e the form) whereas for the Platonists the result of their neglect of the distinction is that a contrary seeks its own destruction (192 A 16-20) In other words he implies that, since the form is the good and the matter is the contrary of the form for the Platonists, their material principle must be evil and they have to assume that evil as such desires its opposite He states the case explicitly in *Metaphysics* 1091 B 31 1092 A 5, where he says that whatever "the contrary element" be called—multiplicity, unequal, or great and small– it will be absolute evil It was for this reason, he interjects, that one (i e Speusippus) refrained from making "the one" the good, on the ground that since generation is from contraries the multiple would have to be "the evil" But the others say that the unequal is the nature of evil He then argues that all things save the one itself would have to partake of evil, that the evil would have to be the χώρα of the good (a reference to the 'receptacle" of the *Timaeus*), that the evil would partake of and desire that which is destructive of it, and that, if—as his own theory holds—matter is the potency of each thing, evil would be the good itself potentially These absurdities, which Speusippus tried to avoid by not positing the good as a principle, result, Aristotle claims, from making the one a principle and a principle as an element (1091 B 1-3), which the Platonists did by identifying "the one" and the good (1091 B 13-14) In the same fashion in *Metaphysics* 1075 A 34 36, after having shown that the Platonists are no exception to the rule that all philosophers make all things of contraries inasmuch as they make matter one of a pair of contraries, Aristotle objects that on their theory all things save "the

of the *Sophist* is not merely interpreted as being exactly what Plato there insists that no one must understand him to mean by it but it is also identified with the "receptacle" of the *Timaeus*, although Plato definitely states that it is one of the ideas and that like the idea of being it pervades all the ideas, these two partaking of each other (*Sophist* 258 C, 259 A-B). Aristotle's reduction of the ideas to the unity of being has caused him to transfer this "otherness" to the physical world and to suppose that, as other than being itself, it must be absolute non-being.

one" must partake of evil, since one of the two elements is absolute evil In *Metaphysics* 988 A 14-15, after having asserted that his account indicates clearly that Plato's formal principle was "the one" and his material substrate a dyad, "the great and the small," he says that he assigned to the former "the cause of good" and to the latter "the cause of evil" (cf. also *Metaphysics* 1084 A 34-35 the Platonists [see note 305 *infra*] assign movement, rest, good, and evil to the principles)

In the light of these passages it is evident that in the *Physics* Aristotle intends to indicate that the consequence of Plato's failure to distinguish privation as essentially different from matter must be an identification of matter and evil, and in this, as in all the passages which contain more than a passing statement, he deduces this necessity from the reduction of the Platonic formal principle to a unit (which then becomes the absolute good as well as absolute being) and from his contention (itself a "necessary deduction") that Platonic matter is the contrary of Platonic form. It is further noteworthy that in the three most discursive of these passages he attempts to give the same interpretation of the "principles" of Empedocles and Anaxagoras which he has also reduced to sets of contraries (*Metaphysics* 1091 B 11-12, 1075 B 1-9, 988 A 15-16; cf. *Crit. Pres Phil*, pp. 172, n. 122 and 223, n 26) The identification of evil with Platonic matter is a construction of Aristotle's parallel to that of matter with non-being, derived from the assumed contrariety of matter and form, it is introduced as an argument against the possibility of a contrariety among the ἀρχαί That there is no evil among the ἀρχαί Aristotle tries to prove by arguing (*Metaphysics* 1051 A 15-21) that in the case of evil the actuality is worse than the potentiality (since potentiality, being of contraries, is of good as well as of evil) and, therefore, evil does not exist apart from particular evils, since evil is posterior to the potentiality, therefore, also, there is nothing evil among eternal and original principles Bonitz (*Metaphysica*, p 407) has pointed out that this argument rests upon an equivocation having shown that actual evil is posterior to the potential in *worth*, Aristotle argues as if he had proved it to be posterior in *reality*, whereas in reality the actual must be *prior* to the potential (cf 1050 A 4 1051 A 3) The two parts of this polemic fit the contentions that the Platonists made evil as matter one of the principles and that Plato spoke of this matter as an entity apart from and prior to the particular bodies or "elements"

To the interpretation of the material principle as absolute non-being Aristotle adds a still more startling declaration. Since non-being has many senses just as being has, he wants to know what *kind* of being and non-being are the principles from which the Platonists generate the plurality of existing things. Plato (cf. Robin, *Idées et Nombres*, n. 450[3] [p. 504]), he says, meant by non-being "the false" from which in conjunction with being

Metaphysics 1089 A 20-31

(*De Generatione* 329 A 8-26), at the same time Aristotle reveals his own difficulty in severing evil from his material principle, for evil must be the actualization of one of the contraries, both of which this material is potentially. By stressing the distinction of the substrate as potentiality from privation as non-being he can insist that for him matter is neither good nor evil; but according to his own doctrine the matter which is potentially evil must be posterior to an evil actuality. If Aristotle saw this difficulty himself, it is intelligible that he should have tried to minimize it by imputing to Plato a closer connection of evil and matter than that which he saw might legitimately be read into his own system, since he insists that the conception of privation avoids the difficulty, he could hardly help believing that the neglect of that concept involves it in its extreme form.

The essentially different interpretation of Platonic matter as αἰτία τοῦ κακῶς (*Metaphysics* 988 A 14) was that which Eudemus adopted (cf. Plutarch, *De An. Proc.* 1015 D), while the identification of matter and evil is not mentioned by Theophrastus even in the passage in which he ascribes to Plato two principles, one of which was ὕλη and the other of which was identified with "the good" (Theophrastus, *Phys. Op.* 9 = *frag.* XLVIII [Wimmer] = Simplicius, *Phys.*, p. 26, 7-13), elsewhere (*Metaphysics* 11 A 26 B 12) Theophrastus, ascribing to Plato and "the Pythagoreans" an opposition of "the one" and "the indefinite dyad," in the latter of which is comprised the disordered and formless, indicates that on this theory evil is an inevitable consequence of the contrariety of which the world consists. If the dyad here be matter, it is not matter which is evil, evil is rather the *concomitant* of the inability of God completely to formalize the formlessness of matter. This is pretty much Aristotle's own theory of evil and defect (cf. *Physics* 199 A 30 B 4, *De Gen. Animal.* 767 A 36-B 15, 770 B 9-17, *Eth. Nic.* 1177 B 26-31). The elements of this interpretation of Theophrastus are, on the one hand, certain of the deductions of Aristotle that we have already discussed and, on the other, some reminiscences of Plato's dialogues (cf. *Theaetetus* 176 A, *Timaeus* 42 A-B, *Phaedo* 60 B-C [ethical and psychological contrast], *Timaeus* 46 C [limited perfection of God's creation], *Politicus* 273 B-C, *Timaeus* 53 A-B [element of disorder in the world]), but, in conjunction with the other passages above, it shows that Aristotle's own associates could acquiesce in many of his interpretations of the Platonic principles without accepting the identification of matter and evil (see, however, pages 265-271 and notes 175 and 176 *infra*).

plurality was generated. There follows upon this statement a sentence which has caused interpreters exceptional difficulty: διὸ καὶ ἐλέγετο ὅτι δεῖ ψεῦδός τι ὑποθέσθαι, ὥσπερ καὶ οἱ γεωμέτραι τὸ ποδιαίαν εἶναι τὴν μὴ ποδιαίαν. Thereafter comes the refutation: it is impossible for this to be so, for neither do geometers assume anything false, since the enunciation is outside of the proof (cf. *Anal. Priot.* 49 B 33-37), nor do generation and destruction involve non-being in this sense but only in the sense of what is potentially. In saying that Plato meant "the false" by non-being Aristotle is without doubt referring to a definite passage in the *Sophist* where the Stranger says (237 A): τετόλμηκεν ὁ λόγος οὗτος ὑποθέσθαι τὸ μὴ ὂν εἶναι· ψεῦδος γὰρ οὐκ ἄν ἄλλως ἐγίγνετο ὄν (cf. also 240 C-E and *Metaphysics* 1026 B 14-15 with *Sophist* 254 A). That the next sentence, however, means that Plato himself enunciated the analogy between the assumption of τὸ ψεῦδος and the method of geometers is by no means obvious. No such statement can be traced to Plato, who, on the contrary, speaks of the relation between the figures used by the geometer and his demonstration to exactly the same effect as does Aristotle himself (cf. *Republic* 510 D-E with *Anal. Post.* 77 A 1-3), the supposition that the analogy is cited from an "oral exposition" of Plato's (Zeller, *Phil. Griech.*, II, 1, p. 458 [n. 1 on p. 457], Robin, *loc. cit.*) is unlikely, inasmuch as it would require us to believe that, although he had set down in the *Republic* the correct explanation of the rôle of geometrical figures in demonstration, he could so far forget or disregard this refutation of a common sophism as to appropriate the mistaken premise and make it a corner-stone of his own philosophy. (The imperfect ἐλέγετο not only need not point to an oral exposition, as Zeller himself admits [*Phil. Griech.*, II, 1, pp. 453-4], but after βούλεται . . λέγειν would be unlikely to do so, for we should expect ἔλεγε instead of the bare passive.) On the other hand, that Aristotle is here introducing the argument of "some other Platonist" (Apelt, *Beitrage zur Gesch. d. griech. Philos.*, p. 252; Ross, *Metaphysics*, II, p. 476) is a conjecture in support of which no evidence, external or internal, can be produced. The charge of taking non-being in the sense of "the false" is directed

against Plato himself, and Aristotle's refutation treats this and the "necessary assumption of something false" as a single doctrine. The contention that geometry derives its demonstrations from false premises, however, is introduced in *Anal. Post.* 76 B 39-77 A 3 as that of certain people in the past (ὥσπερ τινὲς ἔφασαν) who *attacked* geometrical procedure on this score, in *Metaphysics* 998 A 2-4 the argument that geometry uses false assumptions of this kind is explicitly attributed to Protagoras in his refutation of the geometers, and there Aristotle uses this argument *against the Platonic distinction* between the objects of geometry and those of astronomy. There his contention is not that the Platonists accept the validity of Protagoras' argument but that, in rejecting it and avoiding its consequences by positing separately existing objects of mathematics, they bind themselves in consistency also to posit a separately existing object of astronomy other than the phenomenal heaven (cf. 997 B 15-18), in failing to do which they unwittingly lay themselves open to Protagoras' objections In *Metaphysics* 1078 A 17-21 he again refers to these objections when he claims that his own method of treating the objects of abstract science as separable in thought renders them invalid. Inasmuch, then, as Aristotle elsewhere attacks a Platonic theory by arguing that it leaves the way open for Protagoras' objection which, he implies, the Platonists themselves rejected, it is only reasonable to suppose that he is here using the same method and to interpret this sentence as meaning that, since Plato understands by non-being "the false" and derives the existing world from "the false" and being, "consequently by his statement that it is necessary to assume τὸ μὴ ὄν he meant that it is necessary to assume something false just as geometers assume that the line which is not a foot long is a foot long." It must not be forgotten that λέγειν has the connotation "to mean" (cf. *Metaphysics* 1025 A 6-11: διὸ ὁ ἐν τῷ Ἱππίᾳ λόγος παρακρούεται . . . τὸ χωλαίνειν τὸ μιμεῖσθαι λέγων [i. e. "by 'to limp' meaning 'to imitate a limp'"], *Hippias Minor* 374 C); if διό here introduces a conclusion made by Aristotle himself, the passage assumes a logical sequence otherwise lacking and the import of the analogy with geometry becomes clear Aristotle has

already asserted that Plato assumed non-being as the "matter" of genetation (1089 A 5-6). He then objects, first, that it is unnecessary to assume non-being to account for multiplicity (1089 A 7-15) and, second, that non-being has many senses so that the sense in which it is assumed must be determined (1089 A 15-19). Plato meant by it "the false" (1089 A 20-21), and now he draws the conclusion: consequently his meaning was ("it was really said") that one must assume "something false" just as geometers do (cf. *Physics* 209 B 11-12, 214 A 13 where διὸ καὶ Πλάτων . . φησιν . . . ἐν τῷ Τιμαίῳ and διό φασί τινες introduce Aristotle's own conclusions as to the implication of Platonic doctrines, not quotations of Plato's explicit statements [see also notes 184 and 291 *infra*]). In this way he tries to confute the Platonists by identifying their assumption of τὸ μὴ ὄν with an argument against geometry which they themselves reject His refutation is this identification itself, for he does not prove that "the false" *cannot* be an element in generation and destruction; he simply states that the non-being involved in them is non-being *qua* potency and rests his refutation of what he takes to be the Platonic doctrine upon the equivalence which he has established between it and the Protagorean representation of geometrical procedure.

The statement, ὅτι δεῖ ψεῦδός τι ὑποθέσθαι, is merely the Platonic ὑποθέσθαι τὸ μὴ ὂν εἶναι recast according to Aristotle's interpretation of this non-being as ψεῦδος, although it is not impossible that Aristotle had in mind at this time such passages as *Sophist* 260 D-261 B, in which it is said that against the contention of the Sophist the existence of τὸ ψεῦδος must be established. Plato does not, however, here or elsewhere identify non-being and ψεῦδος. In the passage of the *Sophist* to which Aristotle refers and which is the introduction to the discussion of falsehood and reality it is said that the possibility of falsity depends upon the assumption of the existence of τὸ μὴ ὄν; but the next step in the dialogue rejects the notion that this required μὴ ὄν is absolute non-being (237 B-239 B), and, when this non-being has been shown to mean "otherness," the warning against taking it as the contrary of being is repeated (258 E). Nor is τὸ μὴ ὄν even in this sense identified with "the false"; it is

simply one idea in which all the others communicate, and it is this "otherness" in communion with the ideas that makes possible in thought, statement, and appearance the interchange of "same" and "other" which is the essence of τὸ ψεῦδος (263 D-264 B) "The false" is the mistaken combination or separation of really existing factors and comes to be only in the ψυχή, it is itself no element in the constitution of the world

But here again Aristotle, conceiving the Platonic form to be the unique real and Platonic matter to be its contrary, infers that this matter as "other" than the form is not only absolute non-being but also--since the real is identified with the true (the idiomatic force of τὸ ὄν is what causes Aristotle himself to recognize ψεῦδος as one sense of τὸ μὴ ὄν)—the absolutely false Evidence for this identification by Plato Aristotle does not pretend to have; but his inference that this *must* have been Plato's meaning is facilitated by his own classification of the senses of τὸ μὴ ὄν—1) the negation of being in each of the categories, 2) the false, 3) potentiality (cf *Metaphysics* 1017 A 22-B 9)—and by his explanation of it in the second sense as the separation of what is combined or the combination of what is separated (*Metaphysics* 1051 A 34-B 6) This explanation of "the false" is close enough to that which Plato gives in the *Sophist* (263 D) to enable Aristotle to conclude that he was trying to define τὸ μὴ ὄν in the second of the three senses assigned to it by himself [63] This identification of Platonic matter with "the false" is significant chiefly because it is a clear demonstration of the method by which Aristotle from verbal classifications of his own can arrive at what he thinks must have been the meaning of Platonic doctrines; the particular interpretation given in this passage is not elsewhere used in his discussion of the Platonists [64]

[63] In *Metaphysics* 1026 B 14-15 Aristotle interprets the non-being with which Plato says that the Sophist is concerned (*Sophist* 254 A) not as τὸ ψεῦδος but as τὸ συμβεβηκός, an additional kind of being and non being mentioned here and in *Metaphysics* 1017 A 7-22 (cf 1061 B 7-10)

[64] Robin (*Idées et Nombres*, n 450) after his transcription of *Metaphysics* 1089 A 20-23 cites without comment *De Interpret* 21 A 32-33 and *Soph. Elench* 167 A 1 The latter passage (166 B 37-167 A 6) treats fallacies παρὰ τὸ

It is, however, paralleled by a criticism which from the assumed contrariety of Platonic matter and form attempts to make the former principle the object of ignorance. Aristotle does not accuse his opponents of recognizing this consequence themselves, and he does not limit the present criticism to the Platonists. He has asserted that all philosophers derived all existing things from contraries and that for the Platonists one of the contraries was "matter" (1075 A 28-34); this matter is then identified with "evil" (34-36) and a similar identification of "good" and "evil" with the "contrary principles" assumed for the Presocratics is attempted (1075 B 1-11 on Empedocles and Anaxagoras; cf. *Crit. Pres. Phil*, pp. 232 f. and 235). Since the motive of the whole chapter is to set off the insufficiencies of all other theories (that of Speusippus, perhaps, is meant to be the chief target; cf. the closing words, 1075 B 37-1076 A 4) as due to their

Metaphysics 1075 B 20-24

ἁπλῶς τόδε ἢ πῇ λέγεσθαι καὶ μὴ κυρίως and gives as an example εἰ τὸ μὴ ὂν ἐστι δοξαστόν, ὅτι τὸ μὴ ὂν ἔστιν, which is resolved by pointing out that εἶναί τι and εἶναι ἁπλῶς are not the same thing. Similarly the fallacy, ὅτι τὸ ὂν οὐκ ἔστιν ὄν, εἰ τῶν ὄντων τι μὴ ἐστιν, οἷον εἰ μὴ ἄνθρωπος, is cleared up by noting that μὴ εἶναί τι and μὴ εἶναι ἁπλῶς are not the same. The passage of *De Interpret.* is concerned with the former of these two: it is not true to say that because τὸ μὴ ὂν is δοξαστόν it therefore *is*, for the δόξα about it is not ὅτι ἔστιν but ὅτι οὐκ ἔστιν. This passage, Ammonius (*De Interpret.*, p. 212, 33 ff.) thinks, refers to what Plato says in the *Sophist* and *Republic* V, περὶ τοῦ μὴ εἶναι δοξαστὸν τὸ μὴ ὄν. But while it is true that in the *Republic* (478 B) Plato asserts that it is impossible δοξάσαι τὸ μὴ ὄν, the present Aristotelian passages have no reference to such an opinion. (Plato there means by τὸ μὴ ὂν *absolute* non-being [cf. *Republic* 477 A 2-4] as he does in *Sophist* 238 C-239 A where τὸ μὴ ὂν αὐτὸ καθ' αὑτό is set aside as unthinkable; the *Republic* passage has the purpose of identifying the δοξαστόν with the phenomenal world which is neither being nor non-being but something tossed about between the two [*Republic* 479 D, cf. Shorey, *Unity*, pp. 55-6].) The fallacies here resolved are those which Plato ridicules in the *Euthydemus* (284 A-C, cf. *Cratylus* 429 D) and which he attributes to Protagoras as the basis of his contention that contradiction and falsehood are impossible (*Euthydemus* 286 C-287 A; *Theaetetus* 167 A, D, 170 C-171 C). There is no indication that in these passages Aristotle is criticizing Plato's resolution of these fallacies; the suspicion that he is so doing probably arose from mistaking τὸ ὄν and τὸ μὴ ὄν here for "being" and "non-being" instead of understanding them in the particular sense of "that which is" and "that which is not." At any rate, there is certainly no hint of an identification of τὸ μὴ ὄν and τὸ ψεῦδος.

neglect of the efficient, formal, and final causes in the sense in which Aristotle has developed them, the implication is that the difficulty here exposed touches *all* others except Aristotle's own. "The others" have to admit the existence of something contrary to the highest wisdom, a necessity which presumably follows from the contrariety of their first principles inasmuch as Aristotle escapes it by having nothing contrary to his first principle. The ignorance which is contrary to knowledge implies an object contrary to the object of that knowledge; but since there is no contrary to Aristotle's first principle there can be no ignorance contrary to the knowledge of it. So far as the Platonists are concerned, the implication is that they must admit their "matter" to be the object of an ignorance which is the contrary of the highest wisdom, because they conceive the object of that wisdom to be itself contrary to "matter"

It has been suggested (Ross, *Metaphysics*, II, p. 404) that Aristotle is here alluding to *Republic* 477-478 where Plato assigns ἄγνοια to absolute non-being and γνῶσις to being; and Aristotle's tendency to identify τὸ μὴ ὄν with Platonic matter lends this suggestion a high degree of probability. In any case, the criticism rests upon the contrariety of principles assumed for Plato and the Presocratics; and in the case of Plato the "contraries" must be matter and the ideas (1075 A 32-33, 1075 B 17-20). Against the criticism of Aristotle, then, one could point out that the μὴ ὄν of the *Republic* is not "matter" and that the "receptacle" of the *Timaeus*, which Aristotle himself takes to be Plato's ὕλη, is an object of reason (even though a bastard reason, *Timaeus* 52 B) and neither the object of ignorance nor the contrary of any of the ideas (50 E) which are the objects of knowledge (52 A); but the implications of this piece of criticism for Aristotle's interpretation of Plato go far beyond his customary assumption of non-being as an element in the Platonic system. The reason which Aristotle adduces to explain why *his* first principle has no contrary is that all contraries have matter and so involve potentiality in their existence (1075 B 23. δυνάμει ταῦτα ἔστιν, Ross); if, then, his first principle is without a contrary because it itself has no matter and is pure actuality, the argument that Plato must

assume an ignorance contrary to the highest knowledge presumes that the ideas are a contrary and so that they have matter and exist "potentially." Aristotle reached the interpretation that Platonic matter must be the contrary of Platonic form by identifying the latter with absolute being and making it a unitary principle to which, then, matter had to be contrasted as non-being; but his own conception of contrariety thus introduced forces him to reverse the argument and to conclude that the ideas as one term of a contrariety must themselves have a material substrate.

The suggestion of a material element in the ideas occurs frequently even in passages in which Aristotle is concerned only with the material substrate of physical nature The questions raised in this way concerning the "structure" or "derivation" of the ideas must be postponed to a later chapter; here we are considering only the criticism of what Aristotle takes to be in the Platonic system the analogue of his own ὕλη of physical change. It has been seen, however, that his conception of the ideas, of "Platonic form," largely determines his interpretation of Platonic "matter" in this sense, and it is appropriate to note here that it is Platonic "matter" as the *contrary* of the ideas which he ends by introducing as an element into their own constitution

The purpose of the first book of the *Physics* is to establish the theory of the triad of principles of natural change—form, privation, matter; the novelty and significance of this theory, according to Aristotle's own belief, lie in the doctrine of the logical difference of substrate and privation and the consequent contrariety of privation and form. Herein Aristotle finds its essential difference from the theory of Plato, who, he insists, made matter both numerically and essentially one; the absurdity which necessarily results from this mistake is that matter as such becomes the contrary of form. His contention that Plato conceived of matter as a unit, Aristotle argued, is not vitiated by the fact that it was called by the compound name, "the great and the small." In the third book of the *Physics* where Aristotle undertakes a discussion of the infinite (τὸ ἄπειρον) which, he says, all who have

Physics 203 A 1-16

touched upon physics have discussed and which all have made an ἀρχή in some sense, he designates as those who have posited substantial infinity the Pythagoreans and Plato but draws the distinction that the former identified the infinite with τὸ ἄρτιον whereas Plato made the infinites two—τὸ μέγα καὶ τὸ μικρόν. "The great and the small" which according to Aristotle is Platonic matter and essentially as well as numerically a unit now is represented as two distinct entities Inasmuch as Aristotle has a few lines earlier (203 A 6-10) said that, while the Pythagoreans treat infinity both as an ingredient of sensible objects and as existing "outside of the heavens," Plato held that outside there is no body nor even the ideas (for they have no local position) but that the infinite exists both in sensible objects and in the ideas, one might suppose that in attributing to Plato two infinities he meant to indicate that the infinity in the ideas was other than that which is the matter of sensible objects That he intended no such distinction, however, appears from *Physics* 206 B 27-33, a passage which concludes his exposition of the "potentially infinite by division" and his explanation that the "potentially infinite by addition" exists only in the inverse sense of an infinite converging series This theory he seeks to confirm by an appeal to Plato who also, he says, made the infinites two for this reason, namely because both increasing and diminishing progressions appear to have no limit He does add that, although Plato posited two infinities, he made no use of them, an assertion which he supports by the statement that in numbers Plato made the unit the minimum and the decad the maximum Aristotle, then, by his attribution of "two infinites" to Plato in 203 A 15-16 must mean to identify τὸ μέγα with his own "additive infinite" and τὸ μικρόν with his "infinite by division"; his motive for interpreting "the great and the small" as a *pair* of concepts is here the same as in 187 A 16-20, 189 A 8, 189 B 11-18, the desire to find a doctrine of his own implicit in previous thought, and the contrary to that for insisting in 192 A 1-34 that this same principle was essentially a single unit.

Aristotle himself indicates that the "substantial infinity" attributed to Plato and that attributed to the Pythagoreans were

not the same, for, since the ἄπειρον of the latter extended outside of the universe while Plato held to a limited and exhaustive universe (203 A 6-10; cf *Timaeus* 32 C-33 A), the ἄπειρον of the Pythagoreans was "boundless in extent" while Plato's was not. Since it is the infinite in the sense of the ἀδιεξίτητον with which Aristotle is here concerned, the "substantial infinity" which he refutes is that of the Pythagoreans rather than that of Plato (cf. 204 A 32-34). That for them, however, this "infinite" was substantial, that is, was αὐτό τι ὂν ἄπειρον, seems to have been a conclusion of Aristotle's deduced from its resemblance to the ἄπειρον of Plato in being, *qua* ἄπειρον, an ingredient in existing things, a conclusion, however, which is shown to be largely Aristotle's own articulation of a confused Pythagorean doctrine by his reference to their identification of κενόν and "boundless breath" (cf. *Physics* 213 B 22-27; Aristotle, *frag.* 201; *Crit. Pres. Phil.*, pp. 24-26, 38). On the other hand, Plato by the term ἄπειρον meant rather "indeterminateness" than "unlimited extension," as can be seen both from Aristotle's assertion that he believed in a limited universe and from the fact that in the *Philebus* (24-25) ἄπειρον as a generic term includes—besides the pair μεῖζον καὶ ἔλαττον—μᾶλλον καὶ ἧττον, σφόδρα καὶ ἡρέμα, θᾶττον καὶ βραδύτερον, ξηρότερον καὶ ὑγρότερον etc., that is intensive and qualitative as well as quantitative indefiniteness (cf. Shorey, *Unity*, pp. 64-65 on various senses of ἄπειρον in the *Philebus*). The refutation of the possibility of "substantial infinity" (*Physics* 204 A 8-34 = *Metaphysics* 1066 B 1-21) assumes a concept which corresponds strictly neither to Platonic nor to Pythagorean doctrine but combines elements drawn from both. In so far as the argument requires ἄπειρον to mean ἀδιεξίτητον it has no validity against Plato; this, however, is the sense which Aristotle attributes to his opponents and which he himself is interested in investigating (204 A 13-14 = 1066 B 6-7). The *a fortiori* argument, that the infinite, being an attribute of number and magnitude, cannot exist separately because number and magnitude themselves cannot, not only assumes what Plato would deny concerning number but treats τὸ ἄπειρον in the restricted sense of unlimited extension rather than in the Platonic sense of the indeterminate which is rather

a privation of number than an attribute of it (cf. *Philebus* 25 A-B) Similarly, the choice of divisibility or indivisibility applied to τὸ ἄπειρον constitutes a dilemma only if ἄπειρον means unlimited in extent, for there is no difficulty in assuming many indeterminates and, since an indeterminate need not as such be quantitative, there may be many indeterminates which are not divisible Since Aristotle appears to apply the conclusion of his argument especially to the Pythagoreans (204 A 32-34) and says that the general inquiry is not here his concern but only whether there is a body infinite in extent (204 A 34-B 4), it may seem unfair to object that Plato is not affected by this refutation; the previous association of Plato and the Pythagoreans with regard to substantial infinity, however, indicates that the criticism was meant, at least incidentally, to confute the former as well.

Here in the *Physics* we have seen Plato and the Pythagoreans associated in holding a doctrine of substantial infinity and Plato distinguished from the Pythagoreans by his theory of a dual infinity; further, Aristotle has said that it was the phenomena of the endless progressions of the additive and divisive series that led Plato to this conception. In the history of the concept of causation which is given in *Metaphysics* A, in chapter 6 where Plato's philosophy and its origin are outlined, it is the aspect of τὸ ἄπειρον alone that is used to represent Platonic "matter"; and in this regard it is significant that Plato's doctrines are here treated as developments—at times even as merely superficial variations—of Pythagoreanism. "The great and the small" are introduced as being the material principles (n. b. ἀρχάς, 987 B 21) but they are now the matter of other things because they are primarily the material principles of the ideas (987 B 18-21), this conception is said to differ from that of the Pythagoreans in that instead of treating the infinite as a unit it sets up a dyad and makes the great and small the constituents of the infinite (987 B 25-27). Moreover, the reason for making the material principle a dyad is here explained by the fact that the numbers are easily generated from the dyad as from a plastic block (987 B 33-988 A 1; cf. ὥσπερ ἔκ τινος

Metaphysics 987 B 20-988 A 14

ἐκμαγεῖον with *Timaeus* 50 C). His account, Aristotle says, makes it clear that for Plato the material substrate both of sensible objects and of the ideas themselves was a dyad, "the great and the small" (988 A 11-14) This is not in contradiction with the statement of the *Physics* (203 A 9-10) that the ἄπειρον is in both the sensibles and the ideas; but that the same material principle when formalized by τὸ ἕν becomes the ideas and when further formalized by the ideas becomes the sensible objects is certainly not in accordance with the reasoning that "the great and the small" is an element of sensible things because these latter are caused by the ideas of which "the great and the small" is the material element Although at the end of the chapter Aristotle holds that this "matter" is the substrate of sensibles (even though it is also the substrate of ideas), he at first talks of it as the "matter" of the ideas only and his explanation for the assumption of the duality of the ἄπειρον here would confirm the notion that he is not thinking of it as the substrate of the sensible world. The criticism which follows, however, shows that he is really considering this "great and small" as both a "substrate of numbers" and a "matter of sensibles," for the objection that Plato's theory makes matter produce a multiplicity of objects from a single application of form whereas the opposite is really the case (cf. Ross, *Metaphysics*, I, p. 176), although directed primarily at the theory of the dyad as the material from which numbers are generated, indicates by the examples which are employed (τράπεζα, 988 A 4 [cf. *Republic* 596 A-B]; τὸ ἄρρεν πρὸς τὸ θῆλυ, 988 A 5-7 [cf. *Timaeus* 50 D]) that it is intended to be a refutation of the Platonic theory of the matter of sensibles as well (cf Robin, *Idées et Nombres*, n. 311). The attempt to bring together as closely as possible the Platonic and Pythagorean systems is the reason for the confused and shifting interpretation here Aristotle takes the Pythagorean ἄπειρον to be the "material substrate" of numbers *and* of phenomena, and of the latter because they *are* numbers of which this ἄπειρον is the material element. By explaining that Plato made the ἄπειρον a dyad because it would thus be easier to generate numbers (an explanation which is incompatible with that given in *Physics* 206 B 27-30) Aris-

totle shows that the Platonic and Pythagorean material principles were essentially the same. Since, however, he has asserted that Plato "separated" numbers while the Pythagoreans did not, he is forced to give two contradictory accounts of Platonic matter, according to the first of which (987 B 18-22) the ἄπειρον in its rôle as an element of the ideas is an element of phenomena while the second (988 A 11-14), because the "separation" of the numbers has now been stressed, must use the same ἄπειρον twice over, first as the matter of the ideas which is formalized by τὸ ἕν and then as the matter of the sensibles which is formalized by the ideas. This tendency to bring Platonism and Pythagoreanism into closer relationship is paralleled earlier in the chapter where Plato is said to have differed from the Pythagoreans only in that he changed the name μίμησις to μέθεξις; to support this assertion Aristotle says that the Pythagoreans, who presently appear to hold that αὐτὰ τὰ πράγματα are numbers (987 B 28), say that things exist by imitation of numbers (987 B 11-12).[65]

Although the questions concerning the material principle of numbers and ideas are not to be discussed at this time, it must be noted that Aristotle, even while asserting that the infinity of the great and the small is the material element from which numbers and ideas are derived, still considers it as *identical* with the material substrate of phenomena, and that too although his treatment of it in the former sense causes him to give an interpretation of the origin of the conception of the duality of

[65] The attempt to explain these two statements as references to *different* Pythagoreans is useless. Aristotle makes no distinction here nor does he elsewhere mention a Pythagorean doctrine of μίμησις of this kind (*Metaphysics* 985 B 33 is not a report of Pythagorean doctrine but a reconstruction of the way in which Aristotle supposes that they came to their theory, cf *Crit. Pres. Phil.*, pp. 45, 223-225.) Alexander (*Metaph.*, p. 52, 6-8) knew of no variation of this kind among the Pythagoreans as he shows by his attempt to reconcile it with the "regular" doctrine. For the fragment of Aristoxenus to which Ross refers (*Metaphysics*, I, p. 163) compare *Crit. Pres. Phil.*, p. 392. The letter of Theano in which Pythagoras is said to have asserted that all things come to be not ἐξ ἀριθμοῦ but κατὰ ἀριθμόν (Stobaeus, *Eclogae*, I, 10, 13 [vol. I, p. 125, Wachsmuth]) may go back to Philochorus who wrote a συναγωγὴ ἡρωΐδων ἢ Πυθαγορείων γυναικῶν but certainly no further. For an analysis of the structure of *Metaphysics* A, chap. 6 see pages 190-195 *infra*.

the ἄπειρον which is incompatible with that given when he treats it as the matter of phenomena and which consequently deprives it in its latter rôle of its characteristic indeterminateness in both directions. This is exemplified by the different form of expression in the *Metaphysics* and the *Physics*; in the former Plato is said to have posited a dyad and to have constructed τὸ ἄπειρον ἐκ τοῦ μεγάλου καὶ μικροῦ whereas in the *Physics* he is represented as having made τὰ ἄπειρα two, the great and the small (203 A 15-16, 206 B 28). When Aristotle there argues that Plato did not really employ these two infinities, he has recourse to the argument that Plato believed in a minimum and a maximum number (*Physics* 206 B 30-33). This is not only a further indication that Aristotle, however he happens to take the ἄπειρον in a given passage, still considers the substrate of both numbers and sensibles to be identical; it also shows that this ἄπειρον interpreted as the substrate of phenomena has characteristics which do not fit the notion of a material of number just as the dyad considered as the material of number loses the characteristics of the ἄπειρον which underlies phenomena

Aristotle himself holds that the ἄπειρον is a material cause, its essential nature being privation and its substrate the continuous and sensible (cf. *Physics* 206 B 12-27); and, since the other thinkers, too, obviously use it as matter, it is, he says, absurd to make it that which encompasses rather than that which is encompassed (*Physics* 207 B 34-208 A 4). The word-play upon περιέχειν here refers back to *Physics* 203 B 10-15 where Anaximander's remarks about the ἄπειρον are quoted (cf. *Crit. Pres. Phil.*, p. 19, n 73); but Plato was evidently intended to share this criticism, even though on Aristotle's own testimony his ἄπειρον did not "encompass" the universe as did that of the Pythagoreans, Anaximander, and "most of the physical philosophers" This is substantiated by a clear reference to him at 207 A 29-32. Aristotle has been arguing that the infinite is that of which some part is always beyond rather than that beyond which there is nothing (cf. Ross, *Physics*, p 558 on the word-play here) and that consequently the ἄπειρον is the opposite of that which is whole and complete [66] The whole and complete

[66] *Physics* 207 A 9-12 appears to be a reminiscence of *Theaetetus* 205 A Cf.

involves a limit,[67] so that the ἄπειρον is the matter of the complete magnitude, itself only *potentially* the whole which it becomes actually through something else. *Qua* ἄπειρον it does not encompass but is encompassed and so is rather a part than a whole, for matter is a part of the whole (207 A 1-28, cf. *Crit. Pres. Phil*, p. 23, n 85). This proof that what is ἄπειρον cannot be a "whole" is primarily directed against Melissus and then against all who attributed a kind of dignity to this principle; but the argument that, since it is matter without form, it is *qua* ἄπειρον unknowable (207 A 25-26) leads to a development of the contention that it cannot "encompass" which is supposed to reveal an inconsistency in Plato's theory. The proof that the ἄπειρον is unknowable may have been felt by Aristotle to be itself a criticism of Plato who in the *Timaeus* (52 B 2) says that the "receptacle" is ἁπτὸν λογισμῷ τινι νόθῳ. At any rate, the statement that matter is part of the whole is concluded by the argument that, if it encompasses in the sensible world, then in the intelligible world also the great and the small would have to encompass the intelligibles, although it is absurd and impossible for the unknowable and indefinite to encompass and define (207 A 29-32). The great and the small, the ἄπειρον, and matter are here identified; and this matter is supposed to exist both ἐν τοῖς αἰσθητοῖς and ἐν τοῖς νοητοῖς, in both of which its function must be the same, therefore, since it is impossible that it should encompass the intelligible, it cannot encompass the sensible either. The argument depends upon the ambiguity of περιέχειν which with respect to the intelligibles is used in the sense of "to define" (ὁρίζειν itself with which Aristotle glosses it here has both a local and a logical sense) and in the sense of "to surround" with respect to sensibles; but, the validity of the argument aside, it appears that Aristotle understands

οὕτω γὰρ ὁριζόμεθα τὸ ὅλον, οὗ μηθὲν ἄπεστιν . . οὗ δ' ἔστιν ἀπουσία ἔξω, οὐ πᾶν, ὅ τι ἂν ἀπῇ with the following τὸ πᾶν δὲ οὐχ ὅταν μηδὲν ἀπῇ, αὐτὸ τοῦτο πᾶν ἐστιν; ἀνάγκη. ὅλον δὲ οὐ ταὐτὸν τοῦτο ἔσται, οὗ ἂν μηδαμῇ μηδὲν ἀποστατῇ; οὗ δ' ἂν ἀποστατῇ, οὔτε ὅλον οὔτε πᾶν, ἅμα γενόμενον ἐκ τοῦ αὐτοῦ τὸ αὐτό And with 207 A 8 9 cf *Parmenides* 157 D 7-E 2

[67] Cf *Parmenides* 144 E 8 ff καὶ μὴν ὅτι γε ὅλου τὰ μόρια μόρια, πεπερασμένον ἂν εἴη κατὰ τὸ ὅλον τὸ ἕν ἢ οὐ περιέχεται ὑπὸ τοῦ ὅλου τὰ μόρια; ἀνάγκη ἀλλὰ μὴν τό γε περιέχον πέρας ἂν εἴη.

Plato to have held that the sensibles are somehow contained by the ἄπειρον; and, since this has already been identified with Platonic matter, it must contain the sensibles in the way in which in the *Timaeus* (50 B ff.) the receptacle, it is said, δέχεται ἀεὶ τὰ πάντα.[68] In that case, however, the Platonic ἄπειρον can be said to contain the sensibles only as being that "in which" they come to be and pass away and not as that which surrounds them; so that even within the realm of the sensible alone Aristotle's statement, so far as Plato is concerned, is the result of a play upon the ambiguity of περιέχειν.[69]

Physics 209 A 31-210 A 13

To the preliminary questions concerning the nature of place the notions of container and contained as form and matter furnish the orientation (cf. *Physics* 207 A 35-B 1; *De Caelo* 312 A 12-13). If place is the direct container (περιέχον) of each body, it would be a limit and so might seem to be the form by which the material of the magnitude is limited.[70] On the other hand, inasmuch as place seems to be the extension of the magnitude, it might appear to be matter, for this bare extension is what is encompassed by the limit and similarly when the limit and qualities of a sphere are abstracted there is left

[68] Simplicius (*Phys*, p 503, 11-21) comments upon this argument by saying that, because Plato in the lecture περὶ τἀγαθοῦ called matter "the great and the small" which he also referred to as ἄπειρον and said that all sensibles περιέχεσθαι ὑπὸ τοῦ ἀπείρου and are unknowable because they have a nature which is implicated in matter, indefinite, and unsettled, therefore Aristotle says that in accordance with such reasoning the intelligibles are encompassed and defined by the ἄπειρον in the intelligible world

[69] Taylor (*A Commentary on Plato's Timaeus*, p 86) says that Plato's use of περιέχον in *Timaeus* 31 A 4 is an intentional reference to the earlier use of the word in describing the boundless environment of the world, but see note 196 *infra*, and for the use of περιέχειν to describe the relation of the "whole" to its "parts" cf *Parmenides* 145 A C and *Metaphysics* 1023 B 26 36

[70] See Aristotle's own argument that the form of all things is ἐν τοῖς ὅροις (*De Generatione* 335 A 14-21, cf *Crit Pres. Phil*, pp 343 f), and his statement that τὸ περιέχον καὶ τὸ πέρας is the οὐσία τῆς συστάσεως (*De Caelo* 293 B 13-15) In *De Part Animal* 640 B 29-35 he attributes to Democritus the notion that the outward shape and color is the essence and rebukes him for this theory (cf *Crit. Pres. Phil*, p 259) Stenzel (*Zahl und Gestalt*, p 65, n 2) refers to *Meno* 76 A as an example which shows how "in πέρας und εἶδος Begriffliches und Anschauliches zusammengeht"

the bare, indefinite matter Hence in the *Timaeus*, says Aristotle, Plato asserts that matter (ὕλη) and space (χώρα) are the same thing, for space and the participant (τὸ μεταληπτικόν) are one and the same. Although everyone speaks of place as something that exists, Plato alone tried to tell *what* it is, he, even though he spoke of the participant differently in the *Timaeus* and in the so-called unwritten doctrines, still identified space (χώρα) and place (τόπος). What this difference was to which Aristotle refers he himself indicates a few lines later when he says that, whether the participant (here called τὸ μεθεκτικόν) be matter as in the *Timaeus* or "the great and the small," the participant is still for Plato place (τόπος). The "different terminology" of the unwritten doctrines must then have consisted in the use of the term, τὸ μέγα καὶ τὸ μικρόν

These preliminary suggestions that place is either form or matter Aristotle rejects with the following arguments. First, form and matter are inseparable from that of which they are form and matter whereas place is separable from that of which it is the place, since two bodies can exchange places. Place is rather like a vessel, therefore, in that it is separable from the object it is not form and in that it contains it (περιέχει) it is other than matter. Second, there could be no motion to a thing's proper place, if place were form or matter, for place must have the specific distinctions of "up" and "down" and perform the function of the *termini* of movement [71] Third, as form or matter place would have to be *in* the object, so that there would be a place of place, for form and the undefined matter (τὸ ἀόριστον) move with the object and are not always in the same place but wherever the object is [72] Finally, when

[71] But see *De Caelo* 310 A 31-34 the movement of a body to its proper place is movement to its own form Cf Simplicius, *De Caelo*, pp 697, 9 698, 9 and see pages 413-414 *infra*

[72] In the next chapter (*Physics* 210 A 14-B 31) after having discussed the various senses in which one thing is said to be *in* another and having shown that a thing cannot be in itself as the contained in the container, Aristotle concludes that, since a vessel is no part of its contents, place cannot be matter or form both of which are parts of that which is in place (210 B 27-31) On the answer to Zeno's argument by which the existence of place was involved in an infinite regress (210 B 22-27) cf *Crit Pres. Phil*, p 145.

water, for example, has been generated from air, the place of the former body has perished, for the resulting body is not in the same place; what, then, is this destruction of place?

The assertion that both in the *Timaeus* and in the unwritten doctrines Plato declared place and space to be the same thing (209 B 15-16) can be justified for the former by certain passages in which τόπος and χώρα seem to be used without any distinction of meaning (*Timaeus* 52 A 6, B 4, 57 C; with 52 B 1 cf *Laws* 893 C 1-4); even so, since for Aristotle τόπος is just the position of an object as defined by the inner limit of its direct (unmoved) container and since of space as other than the sum of all the places, i. e. all the positions of all the matter in the universe, he takes no consideration at all (cf Ross, *Physics*, pp 53 ff.) while for Plato χώρα is extension and τόπος any dimensional section of this extension defined by the particular phenomena occurring within it or—what is the same thing—the characterization of χώρα by various sensible qualities at a given moment produces τόποι which are distinguished quantitatively relative to one another,[18] it is consequently quite a different thing for Plato to say that τόπος is χώρα and for Aristotle to identify χώρα and τόπος. Since τόπος for Plato means far more than mere position and is in no sense "the container" of the object, Aristotle's refutation of the identification of τόπος and

[18] *Timaeus* 52 A γιγνόμενον ἔν τινι τόπῳ καὶ πάλιν ἐκεῖθεν ἀπολλύμενον, said of the second class, the μιμήματα, and 52 B ἕδραν παρέχον ὅσα ἔχει γένεσιν πᾶσιν, said of χώρα, are analytical statements of the two sides of the single phenomenon described in 51 B, πῦρ μὲν ἑκάστοτε αὐτοῦ (i. e. the receptacle) τὸ πεπυρωμένον μέρος φαίνεσθαι, τὸ δὲ ὑγρανθὲν ὕδωρ, γῆν τε καὶ ἀέρα καθ' ὅσον ἂν μιμήματα τούτων δέχηται. Cf Robin, *Platon*, p 231 Ce que Platon veut dire en s'exprimant ainsi, c'est justement que son troisième terme *n'est pas un tel contenant* il est ce dans quoi se produisent la génération et la corruption, mais en ce sens qu'il est *le sujet* du Devenir, dire que ceci y entre ou en sort signifie le commencement ou la fin d'une existence, mais en ce sens que ce sujet, qui seul est "ceci" ou "cela" indéterminément, devient tour à tour déterminément telle chose "de telle sorte"

That Plato meant the word τόπος here not to be co-extensive with χώρα but to designate a section of space seems to be assured by a comparison of the phrases ἔν τινι τόπῳ and αὐτοῦ τὸ . . μέρος in the quotations above (cf. the idiomatic τόποι χώρας in *Laws* 747 E) For Plato's notion of the relativity of local position cf *Timaeus* 62 C 8-63 E 8 and A. E. Taylor, *A Commentary on Plato's Timaeus, ad loc.*

matter, assuming as it does throughout that τόπος means simply local position, is an *ignoratio elenchi.*

The conception of τόπος as " the extension of the magnitude," from which Aristotle says that its identification with matter arose (209 B 6-7), does not comport with a theory of the separateness of τόπος, but, when Aristotle argues that place being separate from the object cannot be its matter, he quietly neglects the obvious possibility that anyone who conceived τόπος in the way described was using the word in a sense totally different from that which he assigns to it himself. Yet when against the definition of τόπος as the extension defined by the extremities of the encircling body (211 B 14-28) Aristotle argues that there can be no such extension apart from the magnitude of the body contained, he himself approximates to Plato's doctrine of the indissoluble connection of extension and the reality of material existence (cf. *Timaeus* 52 C 4-5); his assumption that the Platonic χώρα-τόπος was " position " and his consequent belief that he could argue that, since position is separable and matter is not, they are not to be identified appear to him to be justified by the description of the participant of the *Timaeus* as that " in which " one thing after another comes to be [74] On the other hand, in his discussion of the void he says that, since it is that in which there is no material substance, those who make τόπος matter do in fact identify the matter of body with the void (214 A 11-14) This reference to the theory attributed to Plato (cf. 209 B 11-17) is a deduction made by Aristotle himself. and this identification of the void and

[74] *Physics* 211 B 29-36, where the way in which matter comes to be identified with τόπος is a summary of what Aristotle takes to be the argument of *Timaeus* 49 B 7-50 C 6, cf especially 49 B 7 ff ἐν ᾧ δὲ ἐγγιγνόμενα δεῖ ἕκαστα αὐτῶν φαντάζεται καὶ πάλιν ἐκεῖθεν ἀπόλλυται, μόνον ἐκεῖνο αὖ προσαγορεύειν τῷ τε τοῦτο καὶ τῷ τόδε προσχρωμένους ὀνόματι τὸ δὲ ὁποιονοῦν τι, θερμὸν ἢ λευκὸν ἢ καὶ ὁτιοῦν τῶν ἐναντίων καὶ πάνθ' ὅσα ἐκ τούτων, μηδὲν ἐκεῖνο αὖ τούτων καλεῖν with *Physics* 211 B 31-36 ὥσπερ γὰρ εἰ ἀλλοιοῦται, ἔστι τι ὃ νῦν μὲν λευκὸν πάλαι δὲ μέλαν, καὶ νῦν μὲν σκληρὸν πάλαι δὲ μαλακόν (διὸ φαμεν εἶναί τι τὴν ὕλην), οὕτω καὶ ὁ τόπος διὰ τοιαύτης τινὸς εἶναι δοκεῖ φαντασίας, πλὴν ἐκεῖνο μὲν διότι ὃ ἦν ἀήρ, τοῦτο νῦν ὕδωρ, ὁ δὲ τόπος ὅτι οὗ ἦν ἀήρ, ἐνταῦθ' ἔστι νῦν ὕδωρ It is to be noted that the way of coming to regard τόπος as matter here given differs from the " abstraction of form and qualities " which in 209 B 9-11 is given as the basis for the assertion that Plato in the *Timaeus* identified χώρα and matter

Platonic matter is certainly influenced by the proximity of the account of the Pythagorean κενόν which is identified with the ἄπειρον πνεῦμα (213 B 22-29). So in *Metaphysics* 988 A 23-32, where there is a résumé of the previous treatments of "material causality," Aristotle classifies "the great and the small" of Plato and "the infinite" of the Italians together as examples of a material principle which is "incorporeal."

That Plato himself did not posit a void as a separate reality such as that assumed by the Atomists and attributed to the Pythagoreans by Aristotle who identifies it with their ἄπειρον (cf. *Cist. Pres. Phil.*, pp 25, 146 f.) is assured by the explicit statements of the *Timaeus* (60 C, 79 B, 80 C; cf. Robin, *Platon*, p. 243); since the void, however, must be place deprived of matter (214 A 16-17; cf 214 A 12), and for Plato τόπος has been identified with matter, Aristotle concludes that the material of body is for Plato the void.[76] The argument with which Aristotle rejects the supposed identification of matter with the void or with τόπος, namely that these latter are separable from body while matter is not, does not necessarily mean that he considered Plato to have regarded χώρα as separate from the objects of which it is the matter, the fact that he argues to

[76] In *De Caelo* 309 A 21-27 Aristotle mentions those who gave an account of heavy and light though *denying* the existence of void, this is clearly a reference to Plato (cf 309 A 22-24 with 308 B 12-15, 309 A 23-27 with 308 B 32-35, Simplicius, *De Caelo*, p 686, 12-14), and it shows that the attribution of τὸ κενόν to him is a deduction of Aristotle's which must not be considered apart from his dialectical discussion of the void and place. His definite statement here, where he is not concerned with the "necessary consequences" of Plato's theory of space and matter, to the effect that Plato denied the existence of a void is parallel to his similar statement about Empedocles (309 A 19-21) in comparison with his contention, where he is discussing action and passion (*De Generatione* 325 B 9-10), that Empedocles like the Atomists must have assumed indivisible bodies and void In the latter passage after Empedocles is unfavorably compared with the Atomists his failure to posit an ultimate constituent of fire and his other simple bodies is contrasted with Plato's account in the *Timaeus*. This leads Aristotle to compare the latter with the theory of Leucippus (*De Generatione* 325 B 19-33) the indivisibles of Leucippus are solids of an infinite number of figures while those of Plato are planes bounded by a limited number of shapes, but both assume indivisibles characterized by shape From these Leucippus produces generation and dissipation by means of contact and the void but Plato by contact alone, for he *denies* that there is a void

establish the separability of place and states the inseparability of matter as an acknowledged rule (209 B 22-33, cf 211 B 36-212 A 2) may imply that to his mind Plato erred not by separating matter but by making τόπος in fact inseparable inasmuch as he identified it with matter. This interpretation is supported by the argument against the identification of place with the extension defined by the limit of the container. Aristotle proves that there is no such extension apart from the magnitude of the contained body (211 B 14-29); consequently this magnitude cannot be place, just because it is inseparable. Similarly, after having concluded that to make τόπος matter is tantamount to making the void matter, he points out that it is as something separable from body that the void is sought by those who posit it (214 A 14-16), the void as matter would be inseparable and so not a void at all in the sense of the Atomists and Pythagoreans.[78]

Aristotle's belief that Plato's χώρα was meant to denote the same thing as his own τόπος is thus responsible for much of the confusion in his argument which consequently proves only that place cannot be matter and that extension cannot be place but not that extension or space may not be the basis of corporeal existence. His interpretation rests, as he himself says, upon the treatment of χώρα in the *Timaeus*; Plato there uses this word as the name for the "receptacle," the third of the three factors which are necessary to account for physical phenomena (*Timaeus* 52 A 8, 52 D 3), and although he does not call this "receptacle" μεταληπτικόν or μεθεκτικόν, by which words Aristotle refers to it (209 B 12-14, 209 B 35-210 A 2), his ὑποδοχή (49 A 5), παιδεχές (51 A 7), and ἡ τὰ πάντα δεχομένη σώματα φύσις (50 B 6) appear to be rendered fairly enough by these terms so long as the "activity" which they imply and the objects to

[78] It is with reference to this that Aristotle speaks in 214 A 19 of a void that is ἀχώριστον as opposed to one that is κεχωρισμένον The void of the Atomists and the Pythagoreans is separate and provides the intervals which break the continuity of body (cf 213 A 32-34, 213 B 22-27), that identified with Platonic matter is, as matter, inseparable Since, however, the void, if it existed, would be place deprived of body and place has been defined as the inner limit of the container, the void could exist neither as a separate interval nor as inseparable matter (214 A 16-19)

which they refer are not mistaken. If, however, Aristotle thought that his μεταληπτικόν represented Plato's phrase μεταλαμβάνον ἀπορώτατά πῃ τοῦ νοητοῦ (51 B 1) as Simplicius (*Phys.*, p. 542, 11) implies that he did, the false connotation which the term had for him is an indication of his misunderstanding of the rôle played by the "receptacle," for Plato's phrase does not mean that χώρα receives within itself the ideas but merely that, being invisible and formless, it is somehow intelligible (cf. 52 B 1). Whether this was the source of his misinterpretation or—as is more likely—is merely a symptom of it, the basic misunderstanding involved in this use of μεταληπτικόν is vouched for by his supposition that, if the participant is place, the ideas themselves must be in place (209 B 33-35); the account of the participant in the *Timaeus*, he thinks, is consequently inconsistent with Plato's denial of local position to the ideas (cf. *Physics* 203 A 8-9; Simplicius, *Phys.*, p. 545, 18-23). So Aristotle understands the *Timaeus* to say that χώρα as the participant receives within itself the ideas, although Plato there is at great pains to explain that the ideas "enter no other thing anywhere" (52 A 2), that neither of the two factors, space and the ideas, can ever be *in* the other (52 C 5-D 1, cf. Shorey, *A. J. P.*, X [1889], p. 68), and that what is *in* χώρα is the class of perceptible phenomena which are μιμήματα of the ideas and which could not be at all except by coming to be in something else (52 A 4-7, 52 C 2-5, 50 C 2-6); it is noteworthy that Aristotle never takes any account of the second of the three factors as something different from the ideas but instead talks of the ideas themselves as if they were these μιμήματα.

Aristotle's argument here is obviously connected with that in *Physics* 207 A 29-32 which purports to show that Plato's inadequate account of the ἄπειρον would result in the absurdity of having "the great and the small" encompass and so "define" the intelligibles. "The great and the small," we have seen, Aristotle directly identifies with Plato's ἄπειρον (*Physics* 203 A 15-16, *Metaphysics* 987 B 25-27), with his material substrate of phenomena (*Physics* 187 A 17-18, 192 A 9-12, *Metaphysics* 988 A 11-14), and with non-being (*Physics* 192 A 6-8), and by implication with the "receptacle" of the *Timaeus* (*Physics*

192 A 11-14, see pages 85-87 *supra*); here the phrase, "the great and the small," is said to have been used by Plato in "the so-called unwritten doctrines" (identified by Simplicius [*Phys.*, p. 545, 23-25] with the lecture on the good[77]), but

[77] Against this identification cf Zeller, *Phil Griech*, II, 1, p 439, n 2 It is clear from the way in which Simplicius introduces his "excerpts" from the περὶ τἀγαθοῦ that he knows it only from the references made to it by Alexander and Porphyry (cf Simplicius, *Phys*, pp 453, 30 31, 454, 17-22, 151, 6) All that Philoponus says on this passage (Philoponus, *Phys*, p 521, 14-15) is that Aristotle himself committed to writing the ἄγραφοι συνουσίαι of Plato Both Simplicius and Philoponus make the phrase in *De Anima* 404 B 19. ἐν τοῖς περὶ φιλοσοφίας λεγομένοις refer to the περὶ τἀγαθοῦ (Simplicius, *De Anima*, p 28, 7-9, Philoponus, *De Anima*, p 75, 34-35) although it could possibly mean only either "lectures on philosophy" or the dialogue, περὶ φιλοσοφίας, which makes it certain that neither of them had seen the writing It is further remarkable that in *Physics* 194 A 36 the words εἴρηται δ' ἐν τοῖς περὶ φιλοσοφίας are thought by these commentators and by Themistius to refer to the *Nicomachean Ethics*. (Cf Simplicius, *Phys*, p 304, 1-3, Philoponus, *Phys*, p 237, 26 27, Themistius, *Phys*, p 43, 9 Heitz [*Die verlorenen Schriften des Aristoteles*, p 183] argues that Themistius' words do not take cognizance of the phrase ἐν τοῖς περὶ φιλοσοφίας and that this remark is an interpolation in the text of the *Physics* On the contrary, Themistius' words certainly presuppose some such sentence as we have in Aristotle's text, the attempt to get them out is occasioned by the desire to excise any direct reference by Aristotle to his own dialogues [Heitz, *op cit*, p 181, Zeller, *Phil Griech*, II, 2, p 58, n 2], but Themistius, *De Anima*, p 11, 18, shows that he did not think a reference by Aristotle to the περὶ φιλοσοφίας impossible) The confusion of the commentators proves that none of them after Alexander had seen the περὶ τἀγαθοῦ at first hand (cf Zeller, *Phil Griech*, II, 2, p 64, n 1) and that all their knowledge of it came from Alexander's references to it Heitz (*op. cit*, pp 210-16) argues further that even Alexander confused the περὶ φιλοσοφίας and the περὶ τἀγαθοῦ and knew the latter only by hearsay Zeller (*Phil Griech.*, II, 2, p 64, n 1) has answered one of his arguments in support of this contention by showing that the contradiction which appears from a comparison of *Metaph*, p 250, 17-20 (= 206, 19 ff, Bonitz) and *Metaph.*, p 262, 18-19 (= 218, 10 ff, Bonitz) proves not that Alexander did not know the περὶ τἀγαθοῦ but that he did not have first hand knowledge of the separate work, ἐκλογὴ τῶν ἐναντίων. Heitz's further arguments Zeller does not answer, but they are of greater interest for the present study Heitz objects that Alexander on *Metaphysics* 992 A 10 (*Metaph.*, p 117, 23-24 [= 86, 31 ff, Bonitz]) refers to the περὶ φιλοσοφίας whereas what Aristotle there says ought to be found in the περὶ τἀγαθοῦ. Now it will be shown (note 79 *infra*) that the theory considered in 992 A 10 13, while Platonistic, cannot be that of Plato himself (n b. 992 A 16-18 and cf. 1087 B 12-21) It could not, therefore, have occurred in the περὶ τἀγαθοῦ, if this was a report of Plato's lecture, but might well have been found in the περὶ

Aristotle mentions this variation of terminology only to show that his interpretation of the *Timaeus* is not invalidated by it. He must, then, have considered the "receptacle" of the *Timaeus* and "the great and the small" to be the same thing; that he did so is borne out by his express statements that despite the difference of terminology Plato declared τόπος and χώρα to be identical (209 B 13-16) and that whether the participant be "the great and the small" (i. e. as in the unwritten doctrines) or matter as he wrote in the *Timaeus* (i. e. χώρα described as

φιλοσοφίας which contained much more than an account and critique of Plato's own doctrines That Alexander does not refer it to the περὶ τἀγαθοῦ is, consequently, an argument in favor of his knowledge of both this book and the περὶ φιλοσοφίας and, at the same time, further substantiation of the evidence which shows that the doctrine concerned was not Plato's own The same reasoning holds for *Metaphysics* 1085 A 7. Heitz argues again that [Alexander], *Metaph*., p. 777, 18-20 (= 756, 17 ff., Bonitz) refers the theory there discussed to the περὶ φιλοσοφίας whereas it belongs in the περὶ τἀγαθοῦ Here, too, we shall see (note 79 *infra*) that the theory is not Plato's What the commentator attributes to Plato is not the theory of different species of "the great and small" used as the material of lines, planes, and solids but the theory of 2, 3, and 4 as different *formal* elements for these classes. Now this theory Aristotle assigns to Xenocrates in *Metaphysics* 1090 B 21-24. The Pseudo-Alexander, who knew neither the περὶ τἀγαθοῦ nor the περὶ φιλοσοφίας, found in his source that Aristotle discussed "such things" in the περὶ φιλοσοφίας; he betrayed himself by adding the more explicit—and incorrect—information, περὶ Πλάτωνος. Syrianus (*Metaph*., p 154, 12-13) does the same thing (cf also Robin, *Idées et Nombres*, n 272, III [pp. 295-298]) The ignorance of the differences in the theories of Plato's students on the part of the Pseudo-Alexander and Syrianus may be gathered from the following considerations [Alexander], *Metaph*., p 745, 31-34, ascribes to Xenocrates the belief in mathematical number only (the Aristotelian remark in question, *Metaphysics* 1080 B 14-16, refers to Speusippus). Syrianus (*Metaph*., p. 122, 18-23) refers to this ascription and accepts it with his usual correction that the Xenocrateans did not really think that mathematical number *alone* was separate from the sensibles; he does not say anything about Speusippus. [Alexander], *Metaph*., p 782, 31-36, ascribes to Xenocrates *and* Speusippus equally the belief in mathematical number only and for Aristotle's reference to those who identified ideas and mathematicals (i. e Xenocrates) can only say τινὲς δὲ τῶν περὶ Πλάτωνα (*ibid*., pp 782, 35-783, 8). Syrianus (*Metaph*., p 159, 7-15) follows this mistaken notion and, in trying to combine it with his own explanation of the true meaning of the theories, becomes more confused still He gives no names but says that οἱ μὲν (1086 A 2, i e. Speusippus), although they used mathematical terminology for it, τὸν εἰδητικὸν ἑσεβον ἀριθμόν; of οἱ δέ (1086 A 5, i. e. Xenocrates) he says

a factor in physical change), since it is τόπος in either case, the ideas ought to be in place (209 B 33-210 A 2). Since he twice asserts that in the *Timaeus* Plato *said* (or *wrote*) that χώρα (or the participant) is ὕλη (209 B 11-12, 210 A 1-2), although there is no such statement in the *Timaeus* and no such use of ὕλη in the sense of matter,[78] it can be urged that there may be some similar misstatement in Aristotle's citation of the unwritten doctrines However that may be, he clearly believes that in these unwritten doctrines "the great and the small" had the rôle of participant and that it was τόπος-χώρα, his argument shows that according to these "doctrines" the ideas ought to be in place *for the same reason* that the account in the *Timaeus* appears to him to require this conclusion, and consequently the consistency of his argument as well as his verbal statement shows that he made no distinction between "the great and the small" and the "receptacle" of the *Timaeus* but considered them to be two names for the same thing, the material substrate. Inasmuch, then, as the ἄπειρον is identified with "the great and the small," the conclusion that as encompassing sensibles "the

ταῦτα πρὸς ἐνίους ἀποῤῥίπτει τῶν ἀπὸ Πλάτωνος and that, while they used the same names for different things (i e for ideal numbers and for mathematicals), nevertheless ἐπρέσβευον αὐτῶν τὴν διάκρισιν. On the other hand, [Alexander], *Metaph.*, p 766, 4-24, ascribes to "some Pythagoreans" the belief in mathematical number *only*, and to Speusippus *and* Xenocrates the identification of ideal and mathematical numbers Syrianus (*Metaph*, p 141, 23-33) gives exactly the same account, adding his explanation that these (Speusippus and Xenocrates) used the same names but knew the distinction between the two kinds of number. He fails to notice that this explanation, then, on p 159, 7-15 should be given to οἱ μέν (1086 A 2) whereas he gives it to οἱ δέ (1086 A 5), that is, Syrianus agrees with Pseudo-Alexander in the ascription to Speusippus and Xenocrates together of contradictory theories. Furthermore, Pseudo Alexander (*Metaph*, p 463, 2) is unaware that *Metaphysics* 1028 B 24-27 refers to Xenocrates, although Asclepius (*Metaph*, p 379, 17) identifies the theory correctly We must conclude that Alexander probably knew the περὶ τἀγαθοῦ and the περὶ φιλοσοφίας and that none of the later commentators whose works are extant knew either of them at first hand, and further that the statements of Pseudo-Alexander and Syrianus concerning the variations of Platonistic theory show that they had no good source material for this aspect of Platonism

[78] By the metaphorical use of ὕλη in *Timaeus* 69 A 6 all the causal factors in the cosmos are referred to, not χώρα alone (cf. A E Taylor, *A Commentary on Plato's Timaeus*, p. 493); but it is not impossible that Aristotle may have taken this passage as a justification of his statement

great and the small" would have to encompass the intelligibles (207 A 29-30) is analogous to the present argument, that Plato's account of the participant requires that the ideas be in place, and arises from Aristotle's interpretation of the participant as matter which receives the ideas within itself. The same conception is at the bottom of the contention that the ideas must be in motion which is in *Metaphysics* 992 B 1-9 adduced as an absurdity resulting from the Platonic theory of matter and which offers further substantiation of Aristotle's identification of "the great and the small" with what he conceives to be the ὕλη of the *Timaeus*. He there says that "the great and the small" is rather a predicate or differentia of matter than matter itself and compares it with the rare and dense which the physical philosophers consider to be the prime differentiae of the substrate (cf. *Physics* 187 A 12-20). This shows that he is thinking of "the great and the small" as the substrate of physical phenomena. Then he proceeds to argue that, if these (i. e. "the great and the small") are motion, then the ideas will be in motion. For the attribution to Plato of the doctrine that "the great and the small" is motion we may compare *Physics* 201 B 20-21 where "some" are said to have defined motion as ἑτερότης καὶ ἀνισότης καὶ τὸ μὴ ὄν and the statement of Eudemus quoted by Simplicius (*Phys.*, p. 431, 8-9) according to which Plato said that motion is τὸ μέγα καὶ μικρὸν καὶ τὸ μὴ ὂν καὶ τὸ ἀνώμαλον. The words ἀνώμαλον in Eudemus and ἀνισότης in Aristotle allow us to recognize the doctrine of *Timaeus* 57 E-58 A (οὕτω δὴ στάσιν μὲν ἐν ὁμαλότητι, κίνησιν δὲ εἰς ἀνωμαλότητα ἀεὶ τιθῶμεν· αἰτία δὲ ἀνισότης αὖ τῆς ἀνωμάλου φύσεως. Cf. 52 D-53 A); disregarding for the time being the question as to the possible perversion of Plato's meaning in the statements of Eudemus and Aristotle, we may take it for certain that "the great and the small" here identified with motion is the space of the *Timaeus*, and this is further assured by the alternative: "if 'the great and the small' are not motion, what is the source of motion? For the whole study περὶ φύσεως has then been annihilated." If the motion of the physical world derives from "the great and the small" considered as ὕλη, this "great and small" must be the substrate of phenomena; and, if it be

argued that, since "the great and the small" is motion, the ideas must be in motion, this can only mean that the ideas are considered to be involved in this same substrate as they were supposed to have to be in place and to be encompassed by "the great and the small." (Cf the arguments that if one should say that the ideas are ἐν ἡμῖν he would have to admit that the immobile ideas are in motion [*Topics* 113 A 25-30, pages 9-10 *supra*] and that no definition of an active or passive thing can comport with the idea which must be immobile and impassive [*Topics* 148 A 14-21, pages 3-5 *supra*]) In all of this there is no intimation of two different principles, two *kinds* of "the great and the small," or of a difference of kind or function in "the great and the small," the ἄπειρον, and the "receptacle" of the *Timaeus*, they are all identified with ὕλη in Aristotle's sense of material substrate and their shortcomings are measured by the requirements of that conception [79]

From this point of view Aristotle's fundamental objection to Platonic matter is that it is "too mathematical," that what is there represented to be "matter" is merely a predicate of matter, that such differentiae as great and small, like the dense and rare of the physical philosophers, presuppose a subject to be differentiated (*Metaphysics* 992 B 1-7) Moreover, "the great and the small," besides being necessarily relative to something and so requiring an underlying substance which is great or small in virtue of being primarily something else, can be only accidental to quantity and, as relative, cannot be the subject of generation, destruction, or change of any kind (*Metaphysics* 1088 A 21-35) "The great and the small," therefore, regarded as the substrate of change, represents to Aristotle's mind the impossible conception of relation as prior to substance and of quality as a derivation from quantitative difference In determining the value to be placed upon Aristotle's judgment of this aspect of Platonic philosophy we must bear in mind the fact that he makes the same charge against the so-called "material monists" (cf. *Crit. Pres. Phil*, pp. 13, 15-16), for in their physics he believes that quality is nothing more than quantitative relationship.

[79] See Appendix I

It is, however, with the physical elements of the Atomists that Aristotle most closely identifies the " elements " of Platonic physics. Although he takes pains to praise the Atomists for their concern with " the facts of nature " and the consequent consistency of their theory in comparison with the " dialectical " basis of Platonic physics (316 A 5-14, cf. 315 A 34-B 9 and *De Caelo* 306 A 5-9), the fundamental error of the two systems is essentially the same, the reduction of quality to ultimate quantitative difference. It is noteworthy that at one point Aristotle asserts the real meaning of Atomism to be that all things are numbers and constructed of numbers in a sense (*De Caelo* 303 A 8-9). The primary elements of generation, alteration, growth, and their opposites are for the Atomists and Platonists alike in being indivisible magnitudes; they differ in that the Atomists make them bodies whereas, as described in the *Timaeus*, they are planes (*Timaeus* 53 C-55 C). For all the difficulty inherent in the theory of the Atomists, Aristotle asserts that it is at any rate possible for them to give an account of alteration and genesis while those who reduce the elements to planes cannot do so, for nothing except solids results from the composition of planes and, as a matter of fact, they do not even try to generate any quality from them.[80] Aristotle pro-

De Generatione 315 B 24-316 A 14

[80] At the beginning of this chapter (*De Generatione* 315 A 29-33) Aristotle says that Plato discussed only the generation of the elements and did not consider how flesh, bones, or any such things arise or how things undergo alteration or growth. Now in *Timaeus* 73 B-76 E Plato gives an account of the construction of bone, flesh, tendons, skin, hair, and nails, the ultimate basis for all of these is the marrow, itself a symmetrical mixture of the most perfect triangles which could form the four simple bodies, treated and mixed with certain of the simple bodies in various ways. In spite of the fancifulness or vagueness of this account, it seems strange that Aristotle should say that the matter is not treated by Plato at all, for elsewhere he takes a good deal of trouble to attack the doctrines of this part of the *Timaeus*. So, for example, in *De Part. Animal.* 651 B 20-28 he attacks the notion that the marrow is τῆς γονῆς σπερματικὴ δύναμις (cf. *Timaeus* 73 C, 91 A-B), in *De Part. Animal* 652 A 25-B 2 refutes the notion that the brain is marrow (cf. *Timaeus* 73 C), and in *De Gen. Animal.* 769 A 28-B 2 refers with comparative approbation to the notion of the seed as a παγσπερμία (cf. *Crit. Pres. Phil*, p. 284, n. 243). In *De Part. Animal.* 676 B 22-31 Plato's ironical theory of the purpose of the gall-bladder is refuted

ceeds to a criticism of the Atomists and abandons further consideration of the Platonic theory here, but in passing he gives an example of the inferiority of Platonic method to that of the Atomists The reasons which led Democritus to assume the existence of indivisible bodies were proper to the subject of his investigation even though his solution of the problem was wrong, those who use the dialectical method, however, give as the reason for assuming indivisible magnitudes the argument that the αὐτοτρίγωνον (i. e. the ideal triangle) would otherwise be many. This argument is not expressly attributed to Plato and the present tense of the verb (φασὶ, 316 A 12) might lead one to argue that the reference is to a contemporary, e. g. Xenocrates, since no such reasoning occurs in Plato's writings. Zeller (*Phil. Griech.*, II, 1, p. 1018, n 1) believed that it did refer to Xenocrates who identified ideas and mathematicals Nevertheless, it is to Plato's account in the *Timaeus* that Aristotle has been expressly referring (315 B 30, 316 A 2-4), and the

(cf *Timaeus* 71 A-D), in *De Part. Animal* 669 A 18 24 Plato's explanation of the texture of the lungs is attacked (cf *Timaeus* 70 C and *Hist Animal.* 496 B 4-6), in 664 B 6-19 the notion that the ἀρτηρία is a passage for liquids which proceed through it to the bladder (cf *Timaeus* 70 C-D; 91 A) is refuted, in 656 A 13-B 13 the reason given in the *Timaeus* for the lack of flesh on the head and the connection of the brain with sensation are violently attacked (cf also 652 B 3-7, *Timaeus* 75 A-E, 76 D), and in *Parva Nat* 472 B 6-32 the purpose and mechanism of respiration as explained in *Timaeus* 79 A-E are discussed at length. Aristotle's real meaning in this passage of *De Generatione* appears in *De Caelo* 306 B 22-29 where, after he has mentioned the change of the " elements " into one another as described in the *Timaeus*, he asks how flesh, bone, or any continuous (i. e homogeneous) body can come into being on this theory They cannot result from a combination of the elements themselves (for the homogeneous does not arise from mere combination) nor from a combination of the elementary planes (for such combination produces the " elements " and not what is a product of the elements) The concluding remark, that unless one is willing ἐκ παρόδου τοὺς λόγους ἀποδέχεσθαι the proponents of this theory will be seen to abolish genesis, indicates that Aristotle's accusation here is made with specific reference to those passages in the *Timaeus* which pretend to explain the production of homogeneous tissues Inasmuch as Aristotle holds that no kind of aggregation can result in an homogeneous body, which can be explained only as the result of the *limited* alteration that is his " chemical combination " (cf *Crit. Pres Phil.*, pp. 140-143), the failure to distinguish ἀλλοίωσις and γένεσις necessarily precludes the possibility of any rational account of homogeneous tissues.

whole context shows that, whatever the origin of this special argument, Aristotle intends to oppose it as the foundation of the Academic theory of elementary planes to the reasons that caused Democritus to assume atomic bodies. The argument as here put is, however, suspiciously vague. The magnitudes of which Aristotle here speaks should be phenomenal magnitudes; it is phenomenal planes of which the primary bodies in the *Timaeus* are constructed If this be the case, the Platonists, according to Aristotle, argued that, if the constituent planes of physical bodies are divisible, the ideal triangle itself would be divisible; but this, as has been noted (Heinze, *Xenokrates*, p. 59; Robin, *Idées et Nombres*, p. 262), amounts to taking the position that every triangle, whether mathematical or sensible, must be indivisible since every one must partake of the idea of triangle, or rather the position that every sensible object must be indivisible lest the idea of which it partakes be itself divisible into parts. Yet in the *Timaeus* itself even the triangles and squares which form the faces of the corpuscles of the simple bodies are resolvable into smaller triangles of two kinds which are the στοιχεία (*Timaeus* 54 D-55 C) and which are themselves of various sizes (*Timaeus* 57 C-D); no reason is given for the physical indivisibility of these triangles, which as the ultimate constituents of the corpuscles are expressly said to be a postulate (*Timaeus* 53 D), but the choice of the triangles as the ultimate *form* of surface is given: every rectilinear plane is divisible into triangles and all triangles may be resolved into isosceles or scalene triangles but not into figures that are not triangles (*Timaeus* 53 C-D). Obviously Aristotle was at a loss to find in the *Timaeus* a reason for what he took to be the quantitative indivisibility of the ultimate plane figures and so looked elsewhere for an argument which he could interpret as the foundation of this doctrine. That which he here attributes to the Platonists would, however, require that the phenomenal unit be indivisible lest the ideal unit itself become many; but this is to confuse the idea and that which participates in it and to destroy the essential difference between ideas and phenomena which is the foundation of the whole theory (cf. *Phaedo* 101 B-C, 103 A-C; *Philebus* 14 D-15 B; *Republic* 525 D-526 A

with Shorey's notes [Loeb Class Lib, vol II, pp. 164-5]). Aristotle's words are, as has been said, vague and might represent a conclusion concerning magnitudes other than phenomenal; there would be nothing strange in the argument that the unity of the ideal triangle makes necessary indivisible *ideal* magnitudes Just such an argument is preserved and along with it a Peripatetic misinterpretation analogous to that implied in Aristotle's words here The essay on *Indivisible Lines* begins by presenting five arguments used by "some people" to support the thesis that in all quantities there is an indivisible unit The second of these runs as follows (*Lin. Insec.* 968 A 9-14, Apelt's text, Teubner, 1888): If there is an idea of line and the idea is first of all lines but the parts are by nature prior to the whole, the idea of line must be indivisible and so must the ideal square, triangle, and other figures, and, in short, the ideal plane and ideal solid Otherwise there would be something (*i.e* their constituent parts) prior to them This argument is exactly that summarized by Aristotle, and its object is to prove the indivisibility of *ideal* magnitudes, not of phenomenal ones This is further shown by the fact that after the next argument (968 A 14-18), which seeks to prove that the elements of corporeal existence are indivisible, the conclusion expressly states that the two arguments are complementary. "so that not only in intelligibles but also in sensibles is there something indivisible" Yet the author of the essay objects to the argument concerning ideal magnitudes that from the establishment of indivisible lines in the ideal world cannot be deduced the indivisibility of phenomenal lines (969 A 17-19); he fails to understand that from the necessary nature of the ideas is deduced only the indivisibility of ideal magnitudes and that this conclusion is in no way used here to establish any conclusion concerning phenomenal magnitude (for the purpose of this argument see further note 197 *infra*) The fact that the essay is directed against Xenocrates increases the probability that Aristotle in our passage is combining an argument of his with the account in the *Timaeus* and is doing so because he knew of no Platonic argument in support of the indivisibility of the ultimate constituent triangles of the *Timaeus*. In any case the implication

that the Platonists argued from the indivisibility of the idea to that of sensible magnitudes is clearly a misinterpretation

It may be of some significance that Aristotle did not here give any of the arguments preserved in the essay which do attempt to establish the existence of indivisible phenomenal magnitudes; the third (*Lin. Insec.* 968 A 14-18), the proof that fire and the other elements of corporeal existence are indivisible, patently contradicts the doctrine of the *Timaeus*, but the first, fourth, and fifth (*Lin. Insec.* 968 A 2-9, 968 A 18-B 21) argue directly for indivisible phenomenal quanta. These arguments, however, insist primarily upon the existence of indivisible lines; and in this passage of the *De Generatione* nothing is said about such entities, which are by implication excluded from the theory of indivisible elementary planes. In *Metaphysics* 992 A 20-22 Aristotle does say that Plato, in opposing the point as a geometrical hypothesis, frequently set up indivisible lines as the ἀρχὴ γραμμῆς,[81] but a chapter of the *Physics* indicates that he did not understand Plato to mean by this that there is a lower limit to the divisibility of a line in space. He has just remarked that, since it is not difficult to overthrow the theory of indivisible lines, it can be shown that spatial magnitude is infinitely divisible (*Physics* 206 A 16-18); then, after setting forth his theory of the infinite by division and inversely by addition, he remarks that Plato set up two infinities (i. e. the great and the small) because there seems to be no limit to the progressions of increase and diminution. The fact that this is merely a reconstruction of Aristotle's (see page 105 *supra*) does not alter the obvious fact that he could not have ascribed to Plato the doctrine of indivisible lines mentioned in this chapter, for he shows that he is aware that such a theory must deny the possibility of the spatially infinite by division. Nor does the fact that he adds that Plato did not

[81] The notion of indivisible lines is attributed to Plato here only, for Alexander (*Metaph.*, p. 120, 6) merely repeats the text of Aristotle and his words express a certain surprise at the attribution: ἱστορεῖ δὲ ὡς καὶ Πλάτωνος, οὐ μόνον Ξενοκράτους, ἀτόμους γραμμὰς τιθεμένου . The later writers ascribe the doctrine to Xenocrates and even call him the originator of it (cf. the texts gathered by Heinze, *Xenokrates, frags.* 43-49).

use his " two infinities " imply a lower limit to spatial division, for this assertion is supported by the remark that *in the number series* Plato made the unit the minimum and the decad the maximum. That he had to take recourse to the number theory here is evidence that he knew nothing of a limit set by Plato to spatial division

The doctrine of the *Timaeus* is represented by Aristotle as making the primary magnitudes which underlie physical change indivisible planes. That these planes are not constructed of lines and the lines of points he admits; but this very process of resolving bodies as far as planes and no further seems to him highly irrational (315 B 30-32; Aristotle refers to *De Caelo* 299 A 6-9). Since he can see no reason for carrying the analysis so far and no further, he does not hesitate to criticize Plato's theory in what he considers to be its necessary logical implications.

De Caelo 298 B 33-300 A 12

After objecting that those who generate all body from the combination and separation of plane surfaces contradict the laws of mathematics without giving any credible reason for so doing, Aristotle prefaces his criticism of this theory with the remark that to suppose that solids are aggregates of planes is of a piece with the reasoning which makes planes consist of lines and lines of points The discussion which follows is not limited to the construction of the simple bodies which is set forth in the *Timaeus*; it treats this construction as necessarily involving not the plane but the point as the ultimate constituent of body and criticizes it, in company with other theories which employ indivisible or incorporeal elements in physical construction, from the point of view of its bearing upon the question of genesis. It must be noted that in the last two books of the *De Caelo* Aristotle is concerned exclusively with the number of sublunary " elements " and their generation from one another, in which connection the theory of weight and lightness as irreducible qualities of the simple bodies is shown to be required by the phenomena of motion; here no attention is paid to the distinction of alteration and genesis, on the basis of which in the *De Generatione* the Atomists and Platonists are differentiated, and

Aristotle consequently gives a different classification of his predecessors (cf *Crit. Pres. Phil.*, p. 106, n 437). Ultimately, Platonists, Atomists, and "material monists" are all shown to be guilty of the same fundamental error, the reduction of the differences of the "elements" to quantitative relationship (cf. *Crit. Pres. Phil.*, p 213); in the present passage there are distinct indications that the criticism is meant to apply to certain common characteristics in the theories of Xenocrates, Speusippus, the Atomists, and Plato, and at the end (300 A 14-19) it is expressly said to apply to the Pythagoreans also who "construct nature out of numbers" (cf. *Crit. Pres. Phil.*, p 40, n. 154). The charge of contradicting the laws of mathematics, here made against the theory of elementary planes, is elsewhere brought against the Atomists (303 A 20-24), against the Platonists and Atomists together on the ground that in distinguishing the elements by shape they both have to assume a limit to the divisibility of body (306 A 26-B 2), and against any and every theory alike which assumes a minimum magnitude (271 B 9-11). All objections to the *indivisibility* of the primary constituents are, therefore, valid against the Atomists as well as the Platonists On the other hand, the theory of the Atomists, though its ultimate constituents are not incorporeal, is considered by Aristotle to be essentially the same as the systems which make number the elements of all things (303 A 8-10; cf *Metaphysics* 1039 A 8-14); so far as they are indivisible and without qualitative difference, the atoms are essentially points or monads with position, so that the objections to the attempted construction of a qualified continuum from qualitatively undifferentiated, discontinuous elements apply equally to Atomistic and Platonistic theories (cf *De Anima* 409 A 10-28 [Aristotle argues that Xenocrates' theory of the soul as a self-moving number and Democritus' congeries of soul-atoms are essentially the same and open to the same objections] and *Metaphysics* 1084 B 23-28 [Aristotle identifies the use of the unit as an element by the Platonists with the minimal entity out of which the Atomists construct existing things])

Inasmuch as the construction of bodies from planes *logically* involves the construction of lines from points, Aristotle feels

that he can consider the theory as taking the point to be the ultimate constituent of body. Since he himself records the fact that Plato held the point to be merely a geometrical convention (*Metaphysics* 992 A 20-22), even this "logical necessity" hardly seems to be an adequate reason for interpreting the account of the *Timaeus* in this fashion; but, if Aristotle is criticizing not that account alone but the general tendencies of a number of theories which he holds to be at bottom identical, the orientation of his attack is easily explained. There is no doubt that he would have thought himself justified in forcing upon Plato the belief in the point as a substantial element of the line, immediately after recognizing Plato's objection to the point, he argues that, since the line must have a limit, the same reasoning that leads to the belief in the existence of line requires the recognition of the existence of the point (*Metaphysics* 992 A 23-24). Nevertheless, there was a stronger reason than this for attacking the notion that the point is the ultimate constituent of body. Aristotle reports an Academic theory which generated magnitude from the point considered as the analogue of the unit and from a material similar to πλῆθος (*Metaphysics* 1085 A 32-34, B 27-29), the unit and πλῆθος being the principles of number (*Metaphysics* 1085 B 4-10), this was the theory of Speusippus (cf. 1091 B 30-35 and 1028 B 21-24),[82] and this theory Aristotle apparently has in mind here, as may be seen from *Metaphysics* 1085 B 27-34 where, in stating his objections to Speusippus' doctrine of the point as the principle of magnitudes he argues that those points other than the "point itself" cannot be derived from the latter and indivisible parts of extension because the magnitudes (which these points have

[82] *Topics* 108 B 7-31, a discussion of the usefulness of ἡ τοῦ ὁμοίου θεωρία, is closely associated with the method of Speusippus (cf. Stenzel, *Speusippus*, p. 1644). One of the examples used for the application of the method to the establishment of definitions in the case of "widely separate things" is "a point in a line is the same as a monad in number, for each is an ἀρχή". Those who define the monad as the ἀρχή of number and the point as the ἀρχή of line do so in this way, he says, by giving as the genus τὸ κοινὸν ἐπὶ πάντων. The method answers exactly to that which is ascribed to Speusippus by Diogenes Laertius (IV, 2) οὗτος πρῶτος ἐν τοῖς μαθήμασιν ἐθεάσατο τὸ κοινὸν καὶ συγκείσεις καθόσον ἦν δυνατὸν ἀλλήλοις.

then to constitute) cannot be constructed from indivisibles (such as the points would be if their elements were αὐτὴ στιγμή and indivisible sections of extension).[88]

[88] This is the second horn of the dilemma (1085 B 31-34) concerning the *origin* of points and it depends upon what is conceived to be their intended function; i. e. since they are to constitute magnitudes they cannot themselves be derived from indivisible principles. We may note that in *Metaphysics* 992 A 19 20 the same question (from what can be derived the points present in the line?) is used to embarrass a theory which is different from those of Plato, Speusippus, and Xenocrates (see Appendix I) but which, Aristotle implies, might try to defend itself by falling back upon Plato's rejection of the point as an entity (992 A 20-24: note the concessive μὲν οὖν followed by Aristotle's rejoinder καίτοι . . . ὥστ' . . .) So Aristotle here requires those Platonists who rejected the point to account, nevertheless, for its relationship to the line as well as for that of the line to the plane and for that of the plane to solid figure (992 A 13-14) just as he does Speusippus who posited the point as the formal principle of magnitudes Moreover, in none of these Platonistic theories was point, line, or plane regarded as the material constituent of line, plane, or solid, yet Aristotle's objections are based upon the supposition that they meant to *compose* the solid of planes, the plane of lines, the line of points (cf. 992 A 13-14, 16-18, 19 20, 1085 B 33-34, and n. b. 1085 B 29-30 [Speusippus made *the* point the formal principle of magnitude; Aristotle assumes that he must have posited other *points*, derived from this, to serve as the *components* of lines and ultimately of all magnitude In short Speusippus' construction of magnitude is treated as if it were identical with that of the Pythagoreans, cf. 986 B 6-8, 1080 B 16-21]) Just as he assimilates Pythagorean to Platonic doctrine by arguing as if the Pythagorean corporeal units must have been incorporeal mathematicals (cf *Crit Pres. Phil*, p. 43), so he identifies the Platonists' "construction" of body with that of the Pythagoreans by arguing as if the Platonists made the line an aggregation of points. His notion that body in the *Timaeus* is merely an aggregation of planes may have been one point of departure for this interpretation; the fact that planes, atomic lines, or points are like the Pythagorean "units" and the Atomistic "solids" in being treated as "indivisibles" led him in his polemical passages to treat the mechanisms of these theories as identical.

This conflation of Pythagoreanism and Platonism would make it easy to think of both as reducing body to the "limits" of body (for Aristotle points, lines, and planes are potentially existing πέρατα which are actualized by division; cf. *Metaphysics* 1002 A 18-B 11, *Physics* 263 A 23-B 9, 262 A 21-26), and in so doing Aristotle would be encouraged not only by the Pythagorean and Platonic use of the word πέρας but also by his own tendency to associate πέρας and οὐσία (cf. *Metaphysics* 1022 A 8-10; *De Caelo* 293 B 12-15, 310 B 7-11; *De Generatione* 335 A 18-21; *Physics* 211 B 12-14). Nevertheless, he did not overlook the fact that the Pythagorean unit was inseparable and that, while the Pythagorean doctrines seemed to be rather mathematical than physical, they were meant

If lines consist of points, it is not necessary that the section of a line be a line; it has, however, already been shown that there are no indivisible lengths (299 A 8-11) In the passage of the *Physics* (231 A 21-232 A 22) to which Aristotle here refers, it has been shown that what is continuous cannot consist of indivisibles, so that every magnitude, being a continuum, is divisible into continuous magnitudes In view of this, it is obvious that Aristotle can disregard for the purpose of his

to apply to sensibles apart from which they recognized no existence (*Metaphysics* 989 B 33-990 A 32, 1080 B 16-21, 1090 A 30-35), therefore, although he may think of Pythagoreans and Platonists as alike in constructing body of πέρατα, since he knows that the former thought of these limits as sensible only (cf *Parva Naturalia* 439 A 30-B 1), where he talks of those who construct body of limits which are separable from sensibles it is Platonism of one kind or another that is in question. So in *Metaphysics* 1002 A 4 B 11, while lines A 11-12 (οἱ δ' ὕστεροι καὶ σοφώτεροι) might by themselves refer to both Pythagoreans and Platonists (Ross follows Alexander in referring them to the Pythagoreans and Plato [*Metaphysics*, I, p 248] although later [*op cit*, II, p 481] he says that the Pythagoreans are here distinguished from the Platonists'), the separability of planes, lines, and points (1002 A 6-8) certainly excludes the Pythagoreans and the presence of the point in the theory (1002 A 4-6, 15-16) should exclude Plato and Xenocrates In 1028 B 15-18 both Pythagoreans and Platonists generally are probably meant by "those who think that the limits of body have substantial existence"; this group is then divided into those who think that no such substance exists *apart* from sensibles (i e Pythagoreans; cf 990 A 3-5, 986 B 4-8, 1036 B 7-13 contrasted with Platonists in 13-17) and those who think that there are apart from sensibles other substances more real than sensibles, these are the Platonists among whom the theories of Plato, Speusippus, and Xenocrates are then distinguished, the first two by name (1028 B 18-27) The objection that, if one posits lines and planes as principles, these are certainly not separable but are divisions and limits,—the planes of bodies, the lines of planes, the points of lines—, all of which inhere in other things (1060 B 12-19), this is obviously aimed at Platonists, not Pythagoreans; and here again the special attack on the substantiality of the point (lines 17-19) suggests Speusippus to the exclusion of Plato and Xenocrates The implied interpretation, that the Platonistic doctrine here attacked is a development of the Pythagorean theory with an intensification of the difficulties of the latter, is explicit in 1090 B 5-13 There Aristotle says that there are some who think that points, lines, and planes must be real existences To this he objects, first, that these are limits and not substances and, second, that, even if they are substances, they would all be substances of sensibles and so would not be separable Here the first objection could have been intended as an answer to the Pythagoreans as well as the Platonists, but the second can apply only to the latter, and the mention of the point, in addition to the fact that the passages immediately preceding (1090

present argument the differences between points and atomic lines; as indivisible constituents of continua they and every indivisible alike are liable to the same refutation. Consequently, when he proceeds to speak (299 A 11-17) of the impossible consequences for physics which must result for those who posit atomic lines, he is concerned with difficulties which are consequent upon the assumption of *indivisible* physical elements of any kind.[84] This is evident from the fact that the statement of the basic difficulty is so phrased as to apply to "indivisibles" in general (299 A 17-24). Indivisibles are incapable of having the attributes which physical bodies must have, for a divisible cannot inhere in an indivisible and all qualities are divisible either specifically (e g. color into black and white) or incidentally (i e. along with their subjects), all simple qualities being divisible in the latter fashion. This is enough to show that indivisibles of whatever kind cannot be the constituents of physical bodies, for their indivisibility prevents them from possessing the qualities which inhere in the bodies that they are supposed to constitute.

The quality chosen by Aristotle here to demonstrate the general statement is weight (299 A 25-B 23). Since it is impossible that a thing should have weight if its constituent parts have none, if the point has no weight, no body will have any,

A 35-B 5, cf. Lang, *Speusippus*, pp. 28 30 and *frag* 30) and following (1090 B 13-20) are concerned with Speusippus, makes it highly probable that it is his theory particularly that Aristotle has in mind in all these passages, although his procedure in *Metaphysics* 992 A 19-24 (see this note, *init.*) indicates that he considered it legitimate to extend the specific objections to Speusippus' theory to the Platonists generally (For the bearing of these passages on the Pythagoreans cf further *Crit Pres. Phil.*, pp 40-42)

[84] The tenor of 299 A 11-17 implies that the doctrine of ἄτομοι γραμμαί was not by all of its proponents, at any rate, extended to the realm of physics The συμβαίνει λέγειν suggests this (cf *Metaphysics* 989 B 16-21, 1000 B 3-11), and the statement that, while all the mathematical difficulties of the doctrine continue to hold in its application to physics, the physical difficulties do not apply to it as a mathematical theory is hardly in place except as a recognition that some people had restricted the doctrine to mathematics Since Aristotle in the *Physics* shows that he did not believe Plato to have posited a lower limit to spatial divisibility and in the *Metaphysics* says that Plato did assume indivisible lines (see page 128 *supra*), we may have here an indication of the original restriction of the doctrine

for the planes that constitute body consist of lines and the lines of points. Yet that all or, at any rate, some sensible bodies have weight even these philosophers themselves would admit That the point cannot have weight Aristotle proves by showing that what has weight must be divisible. What is heavy or light may be heavier or lighter than something else (although the relatively heavy or light need not be heavy or light absolutely); if whatever is heavier than another thing by reason of being absolutely heavy must exceed it by weight, everything that is heavy must be divisible. The point, however, is admittedly indivisible. Alexander (*apud* Simplicius, *De Caelo*, p 570, 24-28) correctly noted that by this argument it can be proved that no quality can inhere in an indivisible; Aristotle does add two more arguments against the weight of points which proceed by proving that the point cannot have the qualities of density or rigidity. 1) If the heavy is something dense and the light tenuous and what is dense differs from what is tenuous by containing more in the same volume, then the point, if it be heavy or light, will be dense or tenuous. What is dense, however, is divisible (by the same argument as above) while the point is indivisible. 2) If everything heavy must be either hard or soft, a similar impossibility can be adduced; that is soft which yields to pressure and that hard which does not, but what yields to pressure is divisible. The proof that the point, *qua* indivisible, cannot have weight is followed by an argument to prove that the combination of parts which have no weight cannot produce weight (299 B 14-23). This is, in fact, an attempt to demonstrate the premise (299 A 25-26) on which was based the proof that points cannot constitute sensible body (299 A 25-30) Except by resorting to fiction, Aristotle says, there would be no way to determine the number or quality of weightless constituents which would in combination produce weight. Moreover, from the fact that the difference between two weights is always a weight, it must follow that each of the indivisibles has weight. for, if a combination of four points has weight and a combination of more, say of five, is heavier than this, since the difference between something heavier and something less heavy is heavy (just as

the difference between two things having a given quality in different degrees is a degree of that qualification), then the difference between our two combinations of different weights is something heavy, but, since the difference between the two is a single point, the single point must have weight.

That Aristotle considered the argument against the point as a subject of sensible quality to be applicable generally to indivisibles is fully established by *De Generatione* 325 B 34-326 A 21 There is developed against the Atomists this same objection that the atoms, *qua* indivisible, cannot possess the qualities which sensible bodies have but which *qua* constituents of sensible bodies they must possess (cf. *Crit. Pres. Phil.*, pp. 97-100). Immediately thereafter (326 A 21-24) the solids of the Atomists and the planes of Plato are said to be equally vulnerable to the objection just made, for the absence of void in the indivisibles prevents them from becoming more or less dense (cf *De Caelo* 299 B 7-14 and note Aristotle's use of σκληρόν —μαλακόν, στερεόν—μαινόν against the Atomists [cf. *Crit. Pres. Phil.*, p. 99, n 415]); consequently, an indivisible cannot have a plurality of qualities, since it has no internal differentiation, or even a single quality, for the substance of the various indivisibles is identical so that all would have to have the same quality and to the same degree (cf. 326 A 3-6, 16-21). The Pythagorean construction of body from number is also said by Aristotle to be open to the same objections When mentioned specifically at the end of the first chapter of the *De Caelo* (300 A 14-19) the units of the Pythagorean numbers are considered as incorporeals (μονάδες) which cannot have weight and cannot in composition form bodies. This is the form of the argument against them in *Metaphysics* 1090 A 30-35 also; but Aristotle was not unaware of the corporeality of the Pythagorean numerical units, and in one passage he takes cognizance of it by attacking the notion of the unit as an indivisible magnitude and the construction of magnitude out of indivisibles (*Metaphysics* 1083 B 11-19, cf *Crit. Pres. Phil.*, pp. 38-40).

Thus far, then, the criticism of the first chapter of *De Caelo* III is not restricted to Plato's construction of body. In 299 B 23-300 A 12, however, Aristotle expressly discusses the mech-

anism of planes set forth in the *Timaeus*, and, inasmuch as he here argues that the logical consequence of the *Timaeus* would be points that have weight, it is the more probable that the earlier arguments to the same effect were not directed specifically and exclusively against Plato. In the first place Aristotle objects that it is absurd to restrict the combinations of planes to those which result from linear contact (cf. *Timaeus* 54 E-55 C). Since lines can be put together end to end or side to side (i. e. superposed one upon another) so planes must be capable of linear *or* superficial contact; if, however, planes are put together by superficial contact, there must be some body which is neither any one of the elements nor a combination of the elements. The composition of the corpuscles of the simple bodies from planes leads directly to the question of weight If, says Aristotle, the difference of weight in bodies is due to the number of planes of which they are composed, as has been laid down in the *Timaeus* (cf. *Timaeus* 56 B 1-2. ἔτι τε ἐλαφρότατον, ἐξ ὀλιγίστων συνεστὸς τῶν αὐτῶν μερῶν), then the line and the point must have weight, for they are analogous to one another. If, on the other hand, the difference is due to the fact that earth is heavy and fire light, then the plane of the earth-corpuscle will be heavier than that of the fire-corpuscle and so some lines and points will be heavier than others This analysis of planes into lines and of lines into points, which is supposed to be justified by the fact that the relation of line to plane and of point to line is the same as that of plane to solid, in itself is a "logical development" of the *Timaeus*, it then becomes the basis for the general objection that Plato's construction of body annihilates magnitude or, at least, allows for the possibility of such an annihilation. As all things are resolved into one another they will be broken down into their primary constituents so that it would be possible for there to be points only and no body at all.

Concerning the many implications of Aristotle's interpretation of the *Timaeus* in this brief passage it will be well to postpone discussion until his own development of them in later passages has been studied. There are, however, a few characteristics of his criticism which should be noted in this place When Aristotle says that the planes should be capable of combining by

superficial contact, he apparently means that when the corpuscles are dissolved into their constituent plane faces (which are triangles for fire, air, water and squares for earth) or ultimate triangles (right-angled isosceles triangles for earth and right-angled scalene triangles for the other three bodies) there is no reason why in reassembling themselves (*Timaeus* 56 C-57 C) they should not be superposed upon one another instead of joining only at the extremities in such a way as to form the four regular solids which, according to Plato, are the corpuscles characteristic of the simple bodies. Plato, however, at the beginning of this section (*Timaeus* 53 C 5-7) had said that all body has a third dimension and that this volume must be enclosed by a surface, obviously he would have denied that the superposition of plane upon plane produces any body at all That such a superposition might occur during the time that the planes are "drifting" is not impossible, but it would be only a momentary stage in the "drifting" which continues until the planes combine in one of the limited configurations which alone can maintain a quasi-permanence. That these four regular solids are the only possible forms of the corpuscles and that they are constructed in the fashion explained Plato himself says is a postulate justified only by the fact that in this way the phenomena can be "saved" without inner inconsistency while the postulated construction at the same time seems to be in accord with the "aesthetics" of mathematics (*Timaeus* 53 D-54 B). Aristotle's criticism, however, confuses the postulate and the conclusions that follow from it and overlooks the fact that Plato's construction expressly involves the axiom that all body has volume, which volume is not *derived from* the planes but itself implies the planes as bounding surface. The criticism concerning weight depends upon the similar mistaken assumption that the qualities of the simple bodies must be derived from the plane surfaces and that, therefore,—since bodies exhibit weight—the planes themselves must have weight. It is remarkable that Aristotle in his representation of the theory of the *Timaeus* appeals to a passing remark in a section not concerned with the problem of weight (which is treated later in the dialogue) and does not mention the passage expressly devoted to that question (*Timaeus* 62 C-63 E) where the implications

drawn from the chance remark are definitely rejected.[85] Aristotle, in the dilemma with which he presents Plato, tacitly assumes his own doctrine of an absolute weight (or lightness) which inheres as a quality in each of the simple bodies; he does not note that this is expressly denied by Plato, who says that the body which is heavy in one region of the universe is light in another and explains weight as a relationship between a given body and the environment in which it happens to be. Yet, if a certain corpuscle has no absolute weight, there is no cogency in urging that the weight of the corpuscle be a composite of the weights of its constituent planes. In the third objection, too, Aristotle refuses to take into account the postulate that the ultimate triangles are physically unresolvable, his reason apparently being that, since lines are to planes as planes to solids (i. e. planes and lines as well as points are all *πέρατα*), the analysis of bodies into planes necessarily implies the ulti-

[85] It would be possible to argue that in *Timaeus* 56 A-B Plato meant by the word *ἐλαφρότατον* not "lightest" but "most agile," "most nimble" and intended to refer to the characteristic of fire which in 58 B is expressed by the sentence: *διὸ δὴ πῦρ μὲν εἰς ἅπαντα διελήλυθε μάλιστα ἀὴρ δὲ δεύτερον, ὡς λεπτότητι δεύτερον ἔφυ καὶ τἄλλα ταύτῃ.* (Cf the use of *ἐλαφρότης* in *Laws* 795 E· *εὐεξίας ἐλαφρότητός τε ἕνεκα καὶ κάλλους* and *Epinomis* 985 B *ἐλαφρᾷ φερόμενα ῥύμῃ.*) Nevertheless, *ἐλαφρόν* appears in *Timaeus* 63 C where it can have only the meaning "light," for it is opposed to *βαρύ*, so that it is difficult to take *ἐλαφρότατον* in 56 B in a different sense It would not be unexampled for Plato to suggest an explanation of weight here which later in the dialogue is rejected. So in *Timaeus* 49 B-C the cyclical interchange of the simple bodies as it appears to men (n b 49 B 8 *ὡς δοκοῦμεν*, 49 C 7· *ὡς φαίνεται*) includes earth, at 53 E it is cautiously said that some (*ἔνια*) of these bodies can come to be from one another; it is not until 54 B-C that the appearance of a cyclical change involving all four elements is stated to be false and the corpuscle of earth is excepted from the interchange (see note 90 *infra*). In *our* region of the universe it so happens that fire, which has the fewest plane surfaces to its corpuscles, is lightest, and, since Plato cannot stop here to bring in the dissertation on the relativity of direction and of weight, he mentions this coincidence in passing He does not say that it is the explanation of the phenomenon of weight; and, when he comes to discuss the matter for itself, *Timaeus* 63 D-E is too forceful to leave any doubt that the number of planes to a corpuscle has no bearing upon the problem or its solution. In view of this passage (of which she makes no mention) Eva Sachs (*Die fünf platonischen Körper*, pp 213, 228) is not justified in arguing that *Timaeus* 56 B explains the weight of bodies by the number of parts in the corpuscles and, therefore, the elementary triangles are bodies and not plane figures.

mate resolution into points. Here again he neglects the relationship which Plato has established between surface and volume and overlooks entirely the existence of the latter in the scheme. That the surfaces of the corpuscles are plane figures is an assumption to which Aristotle might reasonably have objected, as he might also have objected to the assumptions that these plane surfaces cannot be broken up into any number of irregular plane figures, that the ultimate right-angled scalene triangle is of the single particular kind chosen (*Timaeus* 54 A, B 4-5, D 6-7), and that each of the two ultimate triangles cannot be further broken down into triangles of different kinds; but that the plane surface has triangles as its *elements* (*Timaeus* 53 C) shows clearly that Plato did not believe any more than did Aristotle that a plane can be analyzed into lines or constructed from them, as the statement that all body has a third dimension shows that he did not believe that body can *consist of* planes.

Aristotle next proceeds to prove that every body has a natural movement up or down and that all are either light or heavy (*De Caelo* 300 A 20-301 B 31). He then clears the way for the subsequent development of the theory of four simple bodies, all of which change into one another, by reëstablishing the principle that there cannot be generation of all things or absolute generation of anything (301 B 31-302 A 9).[86] That

[86] This he does by showing that such absolute generation would require the existence of a separate void, so that it is clear from what has been said before that no such generation can take place. "What has been said before," then, refers to *Physics* IV, chaps. 6-9, 213 A 12-217 B 28 where the various theories of void have been set forth and refuted (cf. *Crit. Pres. Phil.*, pp. 146-154). Although the words of the *De Caelo* passage seem not to be intended to apply to Plato or the Platonists, Aristotle does in *Physics* 214 A 11-14 identify Platonic matter with the void, but here he is speaking of a void that is κεχωρισμένον, and there is reason to believe that in the *Physics*, having interpreted the Platonic matter as void, he made it a κενὸν ἀχώριστον (see pages 115-117 and note 76 *supra*). In *De Generatione* 317 A 32-B 18 similarly, after having attacked the theory of indivisible magnitudes (there represented chiefly by the Atomists, the Platonists having been put aside in a few lines as less scientific), Aristotle begins his discussion of coming to be and passing away with the question whether there is absolute generation. If there is, he says (317 B 1-5), something would come to be from non-being, so that it would be true to say that non-being is an attribute of some things, for qualified generation takes its rise from what is not some definite thing, e. g. not-white, so that absolute generation

there are elements, that is bodies into which other bodies are resolvable and which themselves are not resolvable into specifically different parts, he proves from the rule that each natural body has a proper motion; since there are simple and compound motions and the latter are proper to compound bodies, there must be simple bodies of which the former are the proper motions (302 A 10-B 9). This brings him to the number of these elements, and this he sets about to determine by first excluding the possibility that they are infinite in number (302 B 10-303 B 8) and then proving that there must be more than one of them (303 B 9-304 B 22), and it is noteworthy that the final argument used against both the hypothesis of an unlimited number and that of a single element is the argument from the rule of proper natural motion (303 B 4-8, 304 B 11-21). Although the Atomists, along with Anaxagoras, are here used as the representatives of the theory of an unlimited number of elements, it is indicated that they have but one element in the proper sense of the word, for they differentiate air, water, etc. by relative size (303 A 14-16), their distinctions of size and shape, however, leave the underlying substance of all things identical and reduce difference to mere quantitative relation (cf 275 B 29-276 A 6 where the same objection is made to Atomism as is directed against all "monists" in 304 B 11-21). Consequently, when Aristotle comes to refute the theory of a single element, the Atomists and Platonists, who frequently are grouped together as "pluralists" (*De Generatione* 315 B 28-30 [cf. 314 A 8-13], 325 B 24-33; *De Caelo* 305 A 33-35), are both tacitly included with the

must be from absolute non-being. Joachim (*Aristotle On Coming-to-be and Passing-away*, p 90) suggested that in the words ὅτι ὑπάρχει τισὶ τὸ μὴ ὄν there is a reminiscence of Plato's *Sophist* 237 ff. If this is a reminiscence of the *Sophist*, the sentences which Aristotle had in mind are probably those of 237 C ἀλλ' οὖν τοῦτό γε δῆλον, ὅτι τῶν ὄντων ἑνί ⟨τι⟩ τὸ μὴ ὂν οὐκ οἰστέον· πῶς γὰρ ἄν, οὐκοῦν ἐπείπερ οὐκ ἐπὶ τὸ ὄν, οὐδ' ἐπὶ τὸ τί φέρων ὀρθῶς ἄν τις φέροι. The reminiscence is not a criticism but a kind of recognition of Plato's rejection of "absolute non being" (cf *Sophist* 258 E 6-259 A 1), and as such it is remarkable, because in this passage (317 B 13-14) Aristotle refers to his treatment of "coming to be from non-being" in the first book of the *Physics* (189 B 30-192 B 4) in which treatment he accuses the Platonists of asserting that there is generation from non-being in an absolute sense (191 B 35-192 A 34).

"material monists" against whom Aristotle develops the same objection, namely that their theories reduce everything to quantitative relations (303 B 30-304 A 7, 304 A 18-B 11; cf. *Crit. Pres. Phil.*, pp 15-16), for to generate the rest of existence from a single element by means of density and tenuousness or thickness and thinness is the same as to do so by means of relative size (303 B 22-30, cf. 303 A 14-16 [Atomists] and *Physics* 187 A 12-20 [Plato and the "monists"]) Since all such theories must admit the priority of the body that is more subtile, Aristotle argues that, even if water, air, or some intermediate state is called the element, by the very reasoning of these systems fire is really primary since fire is admitted to be the most subtile of bodies (303 B 13-21) In this way Aristotle forces all monistic theories to designate fire as the element, and so he is in a position to refute all by showing that this too results in impossible difficulties. Those who make fire the element are divided into two groups, one of which assigns a definite figure to fire while the other does not, and it is then proved that the same difficulties result in either case. The second group must be Heraclitus and his followers (cf. *Crit. Pres. Phil.*, pp. 14-16); as an example of the first group Aristotle mentions those who make fire a pyramid (304 A 9-18) Some of these, he says, simply assign to fire, as the "sharpest" body, the pyramid, as the "sharpest" figure, others reason more cleverly that all bodies are compositions of the most subtile and all solid figures consist of pyramids so that, since fire is the most subtile of bodies and the pyramid is the primary figure, fire as the primary body must have the primary figure, the pyramid. Plato's reason for identifying the pyramid with fire (*Timaeus* 56 A-B, cf 61 D-62 A) is substantially the first of the two here given; for the "more clever" alternative reasoning there is no parallel. The troublesome point in both cases is that they are supposed to refer to systems in which fire was the sole element, whereas there is no hint elsewhere of anyone who combined with the theory of fire as the ultimate reality the ascription to it of a specific figure Since the Pythagoreans did make the pyramid the figure of fire (Aetius, II, 6, 5 [*Dox. Graeci*, p. 334]) and Hippasus, who was a Pythagorean, made fire the sole element (*Metaphysics* 984 A 7), one might conjecture that it is to fol-

lowers of Hippasus that Aristotle here refers, but little is known of Hippasus and nothing of other Pythagoreans who made fire the one element. Moreover, the first of the two reasons reported can hardly fail to be a reference to the *Timaeus*, the second would then be most probably that of some Platonist who put into the form of a logical proof the statement in the *Timaeus*. Heinze (*Xenokrates*, p. 70, n 1) suspected that the passage should be connected with Xenocrates. His passion for "demonstrating" (cf. *frag.* 76, *Anal. Post.* 91 A 33-B 11) and the fact that he used the terms πυκνόν and μανόν to designate the two classes into which he divided the simple bodies (cf *frag.* 56 and Zeller, *Phil. Griech.*, II, 1, p. 1024) make it seem probable that Xenocrates was the author of the second argument It will be noted that he posited three degrees of πυκνόν and that this πυκνόν (i. e. earth) was opposed to fire, air, and water which were all μανόν; it is most likely, then, that he considered fire to be τὸ πρῶτον μανόν. Aristotle, however, had argued that those who make generation from the elements a synthesis (n. b συγκεῖσθαι in Xenocrates, *frag.* 56) must admit that the more subtile body is naturally prior, and, therefore, for them fire must be primary since they admit that it is most subtile (303 B 17-21) Inasmuch as Xenocrates distinguished the simple bodies as degrees of μανόν and πυκνόν and made fire τὸ πρῶτον μανόν, Aristotle would feel himself to be justified in treating his system as one in which fire was really the element. The definition of generation from which Aristotle's argument proceeds is applicable to Plato's system also (*De Caelo* 298 B 33-299 A 1, 305 B 28-31), and the *Timaeus* itself could be cited to show that Plato held fire to be the most subtile of bodies (*Timaeus* 58 A 7-B 2, 61 E). The Platonists, then, in assigning the pyramid to fire as its figure employed a system of generation and destruction which to Aristotle's mind required fire to be the ultimate constituent of all body.

Material monism, thus reduced to the theory that fire is the element, is now refuted by proving that this primary body can be neither indivisible nor divisible The first alternative is open to the objections already brought against Atomism; but in addition it is untenable from the point of view of physics (cf. the contention that the

De Caelo 304 A 21-B 11

Atomists surpass the Platonists because of their greater attention to physical phenomena, *De Generatione* 316 A 6-14). If all bodies are quantitatively comparable and the magnitudes of the homogeneous bodies (i e earth, air, etc) are to one another as are the magnitudes of their elements, if the more tenuous body is more extensive than the denser body (cf. *Metcorology* 340 A 8-17; Philoponus, *Meteor* , p 24, 19-34), the element of water will be smaller than that of air A greater magnitude includes the smaller, however, so that the element of air must be divisible and so must the elements of all the more tenuous bodies generally. Yet, if this primary body is divisible, then for those who assign a figure to fire, the result will be that, since the pyramid is not composed of pyramids, the part of fire will not be fire and not every body will be either an element or composed of elements (cf 299 B 29-32, the same objection used against combination of planes in the *Timaeus*) As for those who assign no figure to fire, they are driven into an infinite regress, for they can never reach what they define as the element (i e the *most* subtile) unless they become in effect Atomists (cf *Crit. Pres. Phil.*, pp 15-16)

This section is conclusive proof that it was Plato and Xenocrates to whom 304 A 9-18 referred, for, while the Heracliteans are refuted by 304 B 6-11 and Plato is the object of 304 B 2-6, the hypothesis attacked in 304 A 22-B 2 is differentiated from the Atomism of Democritus, although it is open to the criticisms of that theory as well (304 A 23-24) It assigns the pyramid to fire as its figure (cf. ἀμφοτέροις, 304 A 21, referring to those who assign no figure and to those who use the pyramid) but makes the ultimate pyramid of fire, like the ultimate corpuscles of all the simple bodies, atomic, a doctrine which is established for Xenocrates by a comparison of *fragments* 50, 51, 52 and *Lin. Insec.* 968 A 14-18 (cf. 969 A 21-26). Both this doctrine and that of Plato are here attacked as a step in the proof that the element cannot be single, even though Aristotle really recognizes that neither of these philosophers posited one element only (304 A 27, 29, 31-32; 304 B 1-2, 5) He can use them here only because he thinks that by drawing out the necessary consequences of their theories he has shown that they have but one element even while they suppose that they are recog-

nizing more than one; he does so use them because by refuting in turn Xenocrates and Plato he can neatly show that the element cannot have any figure at all. If it had, it must be either indivisible or divisible; and it can be neither Then by refuting Heraclitus, who assigns no figure to fire, he shows that the element cannot be single If it were, it would either have a figure or not; but both are impossible So fire cannot be the element from which all bodies are derived; but he has already proved that anyone who posits a single element must make that element fire; and, since fire cannot be the element, there cannot be only one element. The passage is uncommonly instructive for comprehending the way in which Aristotle "reinterprets" the statements of other thinkers that by criticism of the doctrines so interpreted he may construct the foundations of his own system.[87]

The number of elements, then, must be limited but greater than one, to determine what that number is Aristotle now starts afresh by establishing the thesis that the elements must be subject to generation and destruction and that they can come to be only from one another (304 B 23-305 A 32)[88] The mechan-

[87] Heinze (*Xenokrates*, p 69) has suggested with some plausibility that it was Aristotle's criticism of the construction of the corpuscles in the *Timaeus* which caused Xenocrates to assert the atomic nature of the simple bodies When, however, Heinze quotes *De Caelo* 304 B 6-8 (along with 304 B 2-5) and urges the similarity of these lines with the Xenocratean argument of *Lin Insec.* 968 A 14-18, he apparently overlooks the fact that 304 B 6-8 belongs to the critique of Heraclitus, not to that of Plato. Xenocrates' defense of the "creation" in the *Timaeus*, διδασκαλίας χάριν, apparently extended to the "construction of bodies from planes" (cf. Simplicius, *De Caelo*, pp 303, 33-304, 15, Xenocrates, *frag* 54), and he probably insisted that his own theory of atomic corpuscles was only the clear expression of Plato's real belief Xenocrates' atomism is essentially different from that of Democritus as is also that of Heraclides (cf Sextus, *Adv. Math* X, 318 [ἐδόξασαν τὴν τῶν πραγμάτων γένεσιν . . οἱ δὲ περὶ τὸν Ποντικὸν Ἡρακλείδην καὶ Ἀσκληπιάδην ἐξ ἀνομοίων μέν, παθητῶν δέ, καθάπερ τῶν ἀνάρμων ὄγκων] and Voss, *Heraclides*, *frags* 55, 63, 64)

[88] This is proved by the argument that they cannot be generated either from something incorporeal or from a body apart from and prior to the elements themselves The former of the two possibilities (305 A 16-22) might seem to be meant as a representation of the Platonic theory, inasmuch as Aristotle elsewhere objects that that theory makes the constituents of body incorporeals (*De Caelo* 300 A 7-12, 306 A 23-26) and also that it identifies the matter of body with the void (*Physics* 214 A 11-16), while here the generation of the elements from

isms hitherto devised to account for such generation, however, are inadequate, the systems of Empedocles and Democritus do not really admit generation at all but mistake for it the apparent generation due to excretion (305 A 33-B 28; cf. *Crit. Pres. Phil.*, pp. 118-120). This leaves the possibility that the elements are generated by really changing into one another; and such a change could take place in one of two ways: 1) by change of form, as the same wax might become a sphere and a cube, or 2) by resolution of the figures into their planes, as some put it Of the first possibility Aristotle says merely that it necessarily results in making the simple bodies indivisible, for otherwise the part of fire will not be fire or the part of earth earth since not each and every section of the pyramid is a pyramid or of the cube a cube (305 B 31-306 A 1) The objections to accept-

De Caelo 305 B 28-306 B 2

the incorporeal is said to require the assumption of a separate void At other times, however, Aristotle denies that Plato posited a void (see note 75 *supra*), and even where he identifies Platonic matter and the void he seems to distinguish it from the "separate" void which here is made a requisite to generation from an incorporeal (see note 76 *supra*). Moreover, Plato is immediately hereafter said to assume generation of the elements from one another (305 A 33-35), and this type of theory is one division of the second possibility which is alternative to the first (305 A 14-16) Indeed, one might rather suppose Plato to have been included among those who posit a separate, prior body, for in one passage (*De Generatione* 329 A 15-17) Aristotle purports to find such a notion in the *Timaeus*, but he is hesitant about that interpretation even while suggesting it (329 A 13-15) Our present passage is to be taken as an exhaustive classification of the only possible methods that could be adopted rather than as a résumé of theories that had been propounded (cf Simplicius, *De Caelo*, p 629, 8 17). In *De Generatione* 320 A 27-B 34 there is an analogous classification whereby Aristotle tries to discover the matter of growth and decay, after having shown that it cannot be "separate," he adds (320 B 14-17) that the same reasons preclude the supposition that points or lines are the matter of body That of which they are the limits is the matter and it can never exist without quality or form Even this remark is not specifically directed against the Platonists; Aristotle means by these words to reject any explanation which would make mathematicals the substrate of quality The expression of this notion is given the most general form possible in order that it may cover not only the theories of Platonists, Atomists, and Pythagoreans, all of which Aristotle considered to be variations of this one tendency, but any similar system whatever (cf. *Metaphysics* 1092 B 19-25 number in no sense can be any one of the four causes; the number which may be regarded as matter is always a numbered *something*).

ing this consequence and making the corpuscles atomic are not stated; they have been developed before in a passage which we identified as an attack on Xenocrates (304 A 22-B 2), and, inasmuch as Aristotle here mentions atomic elements and the pyramidal shape of fire, one might at first incline to the view of Heinze (*Xenokrates*, pp. 69-70) that the mechanism of μετασχηματίσεις was that of Xenocrates Certainly, Aristotle could hardly have avoided thinking of him as soon as he mentioned atomic elements and pyramids of fire in the same breath, this, however, is not enough to make it safe to see in the mechanism itself a reference to Xenocrates In the first place, Aristotle uses μετασχηματίζειν to describe what he understands to be certain Presocratic mechanisms of generating other bodies from a single substrate (*De Caelo* 298 B 29-33 [this method of Heraclitus and other "monists" contrasted with the "resolution into planes"], *De Generatione* 335 B 24-31), and it has been seen that he tries to show that the Heraclitean conception of element must logically require a limit to the divisibility of matter (*De Caelo* 304 B 6-9). In the second place, the illustration given of μετασχηματίσεις in 305 B 29-30 cannot exactly represent the theory of Xenocrates, for it speaks of the sphere, which would not have been one of Xenocrates' five figures (the regular solids), and it implies a substrate which is unchanged except for figure, whereas Xenocrates must have made a change of density a concomitant (if not the primary characteristic) of the change Finally, the method as given here is identical with the interpretation which Aristotle puts upon the *Timaeus* simile (50 A-B) in *De Generatione* 329 A 13-21, supposing the πανδεχές to be a substrate prior to the elements which are merely different shapings of it as golden objects are merely different configurations of the otherwise unchanged gold The kind of generation read into the *Timaeus* there Aristotle in *Physics* 190 B 5-6 calls μετασχηματίσεις, and Plato uses the word διασχηματιζόμενον of the "forming" of the πανδεχές (*Timaeus* 50 C). The passage of the *De Generatione* shows that Aristotle considered the πανδεχές and the elementary planes to be two incompatible theories of ultimate matter; [89] it is, therefore, most likely that he here put down

[89] This passage (*De Generatione* 329 A 3-24) is the only place where Aris-

the mechanism of μεταχηματισις simply as one possible way of explaining the interchange of elements and that it is merely his interpretation of what *Timaeus* 50 A-B should logically mean (cf Simplicius, *De Caelo*, p 636, 20-21) The objection to it, the necessity of making the elements atomic, would at once suggest the theory of Xenocrates, and that may have been the reason for the change from σφαῖρα in 305 B 30 to πυραμίς in 305 B 35, although the fact that he was thinking of the *Timaeus* would be enough to make him revert to the Platonic figure of fire, but that does not indicate that the mechanism itself was Xenocratean

After briefly dismissing this possibility Aristotle gives a long list of objections to the theory of the *Timaeus* which accounts

totle expressly considers the relationship of the planes and the πανδεχες He is about to advance his own theory of a prime matter which is the inseparable substrate of the contrary qualities (329 A 24-35), in preparation for this he attacks those who assume a matter separate from the four simple bodies (329 A 8-13, cf 332 A 20 26 and *Crit Pres Phil*, p 58) and in this connection complains that the account in the *Timaeus* is not precise, for it does not clearly say whether the πανδεχές is separate from the elements Nor is any use made of it after it has been said to be a prior substrate of the so-called elements as gold is to works of gold Aristotle first attacks the terminology of the simile by applying his own distinction of ἀλλοίωσις and γένεσις things that are generated cannot be called by the name of that from which they have been generated, although those that are altered are still called by the name of that which is altered, yet Plato says that by far the truest thing to say is that each is gold Then he objects to the inconsistency which he finds between the theory of a πανδεχές and the analysis of the elements into planes Plato analyzes the elements—although they are solids—as far as planes, but the τιθήνη, i e prime matter, cannot be these planes

Aristotle thus identifies the πανδεχές with his own "prime matter" He consequently misinterprets the purpose of the simile in the *Timaeus* (50 A B), which is to show that the nature of the recipient is always the same, as the gold is always gold, while the phenomena, like the shifting shapes of the gold (Aristotle pays no attention to the important phrases, μηδὲν μεταπλάττων παύοιτο and ἃ γε μεταξὺ τιθεμένου μεταπίπτει), being in constant flux, have no permanent character at all, because the words τόδε and τοῦτο imply stability they cannot be used of phenomena but only of the permanent receptacle (*Timaeus* 49 D-E) Aristotle, however, treats the simile as if Plato had said that it is truer to call a golden statue "gold" than statue", if the gold had altered, the result might still be called gold, but, if there is real generation from it (and, since Aristotle supposes that the gold is meant to illustrate the rôle of the πανδεχές as a "prime matter" from which the elements are generated, he believes that Plato

for the interchange of the simple bodies by the resolution of their corpuscles into planes.

1) According to this theory not *all* the simple bodies can interchange and this Plato admits; but it is unreasonable to exclude one of them from the process in which all the others are involved nor is this in agreement with the evidence of sense which shows that all of them change into one another The result is that the statements which are supposed to be concerned with phenomena do not agree with the phenomena, and the reason for this, Aristotle says, is that the first principles have been incorrectly assumed, the desire being to reduce everything to a set of predetermined opinions (cf the similar criticism in *De Generatione* 316 A 5-14 [cf. *Anal. Post.* 81 B 18-23]). This leads Aristotle to assert that the principles of sensible objects must be sensible, of eternal objects eternal, of perishable objects perishable, in general of the same class as the subjects of which they are the principles (cf. *Metaphysics* 1000 A 5-9, 1000 B 20-1001 A 3, 1060 A 27-36, 1075 B 13-14, *Anal. Prior.* 46 A 3-27, *Anal. Post.* 71 B 19-25), the Platonists, however, out of love for their *a priori* opinions, act like those who defend a thesis in debate and are so sure that their principles are right that no consequence drawn from those principles can daunt

is trying to give an example of generation in his own sense), the generated substance cannot be called gold at all The "refashioning," to be sure, Aristotle would deny to be even an ἀλλοίωσις and so would assert that the shapes should not in any case be called "gold" but "golden" (*Physics* 245 B 6-246 A 9, *Metaphysics* 1033 A 5-23, cf. Shorey, *A. J P*, X (1889), pp 64-65, Joachim, *Aristotle On Coming-to-be and Passing-away*, pp 196-198, A E Taylor, *A Commentary on Plato's Timaeus*, pp. 322-324)

The objection that the "recipient" and the planes cannot be identical is of the greatest significance for Aristotle's interpretation of the *Timaeus*. The "recipient" he expressly identifies with his own "prime matter", therefore, he cannot see that it plays any part in Plato's physics, for he thinks that the component planes exhaust the nature of the corporeal elements. In that case, body would consist of incorporeals (n b ὄντων στερεῶν expresses this objection and μεχρὶ ἐπιπέδων probably implies that it was unreasonable to carry the analysis *only* so far, cf. 315 B 31-32), and, since corporeal existence is nothing but these planes, if the πανδεχές is to fit into the system at all, it must be just the sum of the planes, but as "matter" it cannot be incorporeal, and therefore Aristotle supposes that Plato, after having introduced the notion of such matter, abandoned it for the theory of planes

them, whereas some principles ought to be judged from the end in which they issue, which in the case of physical science is the sensible phenomenon

Aristotle, in short, is complaining that Plato does not even try "to save the phenomena"; that his exclusion of earth from the interchange of bodies was forced upon him by the nature of the principles he had chosen beforehand (i e. in this case the triangles out of which the corpuscles are constructed).[90] There is no reason to believe that Plato, quite to the contrary, may not have thought that the phenomena required him to deny the interchange of earth with the other simple bodies because upon close examination earth is seen not to become any of the other three or any of them earth (so Proclus *apud* Simplicius, *De Caelo*, p. 643, 13-27). Certainly Aristotle's indictment of Plato's method can hardly be accepted as fair in the face of the evidence which shows that Plato himself set the "saving of the phenomena" as the canon for physical hypotheses (cf Sosigenes

[90] Eva Sachs (*Die fünf platonischen Korper*, pp 229-232) adopts essentially the same point of view when she says that Plato had no intention of excluding earth from the interchange of the simple bodies but was forced to it because "sein mathematisches Bild nicht ausreicht, und er ware sicher sehr zufrieden gewesen wenn ihm jemand noch einen vierten regularen Korper, der aus gleichseitigen Dreiecken bestanden hatte, hatte verschaffen konnen" She goes so far as to suppose that when Plato wrote *Timaeus* 49 C he meant to assert that all the elements change into one another, and the fact that he let 49 C stand even after he had excluded earth from the process seems to her proof of her contention Surely, the fact that "he let it stand" is more likely to prove that he saw no inconsistency between it and the later explicit exclusion of earth (54 B C, 56 D); and the phrases, ὡς δοκοῦμεν, ὡς φαίνεται, of 49 B C are sufficient warning that he did not intend to commit himself to the cycle of transmutation there set down (cf Cornford, *Plato's Cosmology*, p 180, n 2) As for the further argument that Simplicius expressed the opinion that "Platon wahrscheinlich alle Elemente ineinander ubergehen lasse (ἴσως δὲ καὶ τὴν γῆν)," a glance at the passage (Simplicius, *Phys.*, p 35, 24-27) will show that since the Atomists, Pythagoreans, Plato, and Aristotle are all lumped together, ἴσως δὲ καὶ τὴν γῆν can hardly prove anything about *Plato* but rather implies that some one in this group *excluded* earth from the process, and had Miss Sachs noted the manner in which Simplicius (*De Caelo*, p 644, 11-18) tries to assimilate the Platonic "receptacle" to Aristotelian "prime matter," supposing the elementary triangles themselves to be broken down into it and reconstituted from it, she would probably not have cared to invoke him as an authority for the true meaning of the *Timaeus*.

apud Simplicius, *De Caelo*, p. 488, 21-24), a notion which occurs constantly in the *Timaeus* itself in the form of "preserving the likely account" (cf. 56 A, 48 D, etc).

2) The exclusion of earth from the cycle of transmutation, Aristotle proceeds, must mean that earth is really elementary and alone indestructible, since that which cannot be resolved is indestructible and elementary and earth alone cannot be resolved into another body.[91]

This argument is patently invalid. Earth is resolved into planes just as the other corpuscles are and these plane figures are no more earth than the triangles are fire, air, or water. None of the "simple bodies" is an element just because they are all constructed of elements other than themselves; and Aristotle himself recognizes this when he objects that the theory results in the position that fire can be divided into parts that are not fire.

3) The "suspension" of the triangles, which occurs in the interchange of the simple bodies because of the fact that the

[91] Aristotle's own doctrine that any one of the simple bodies can change into any other is a consequence of the theory that each is "prime matter" informed by two of the four "contrary qualities" (*De Generatione* 331 A 12 332 A 2); and the fact that they are merely the four possible groupings of these qualities is itself complete refutation of Plato's exclusion of one of them from the cycle of transmutation (*De Generatione* 332 A 27 33, the reference being to 331 A 12 332 A 2) This cycle, which is an imitation of circular motion and so continuous, answers the question why the simple bodies have not in the course of time been completely segregated the motion of the sun along the ecliptic brings them into contact and so they are transformed into one another, and changing thus they cannot remain in their assigned places (*De Generatione* 337 A 7-15) This is a reference to the question raised in the *Timaeus* (58 A, cf *De Generatione* 318 A 17 and *Phaedo* 72 C-D) and a tacit rejection of the explanation given by Plato there (*Timaeus* 58 A-C [Shorey, *Class Phil*, XVII, pp 350, 352]) In connection with the question of the mutability of earth it may be noted that the suggestion in the *Oxford Translation* to the effect that *Meteorology* 341 B 6-10 is a reference to *Timaeus* 56 D cannot be right, by τῆς γῆς (341 B 6) Aristotle means "the earth," comprising both earth and water, and his objection is that τινές assumed an ἀναθυμίασις of water only, whereas there is also an exhalation from earth itself as well This dry exhalation, like the direct transmutation of earth to fire on which it depends, was an unique feature of Aristotle's system (cf *Crit. Pres Phil.*, pp. 122 125), the reference in this passage, then, is to all who posited a change of water under the influence of the sun but none of earth.

different corpuscles consist of different numbers of triangles, is unreasonable

When the cubic corpuscles of earth are broken up, the surfaces drift about until they can recombine with their own kind to form new corpuscles of earth (*Timaeus* 56 D). Similarly, if corpuscles of air, i e octahedra, are dissolved, the triangular surfaces may join to form corpuscles of water which are icosahedra; but it will require the surfaces of two and one-half corpuscles of the former to make one corpuscle of the latter (56 E) Thus, in certain changes it is necessary to assume that a number of surplus planes will be drifting free; and this assumption of geometrical figures existing and moving by themselves is a "hard doctrine," certainly As A E. Taylor says, however, it is no harder than the modern notion of the "'propagation' of wave-motion" by which we mean "the *form* of the undulation, not a body of stuff" (*A Commentary on Plato's Timaeus*, p. 408; cf Shorey, "Platonism and the History of Science," *American Philos. Soc. Proc.*, LXVI [1927], p 178); and it is inconsequential to argue that Plato could not have made mathematical figures swim about in water or air and so must have meant the triangles to be corporeal (Eva Sachs, *op. cit.*, pp. 214-215, cf. H Martin, *Etudes sur le Timée de Platon*, II, pp 239 ff) Aristotle does, however, neglect the rôles of the idea and the receptacle whenever he criticizes the theory of planes. The "simple bodies" are phenomena produced by the influence of the ideas upon the receptacle within certain definite limits or configurations; the dissolution of a corpuscle is the disruption of such a "focus of events," and the disappearance of a figure here and its reappearance there is taken to indicate the intermediate existence of the geometrical constituents of that figure Aristotle attacks the planes in isolation with the "common-sense" objection for which Professor Shorey has quoted parallels from criticisms of modern physics ("Platonism and the History of Science," *loc. cit.*). Nor does he take cognizance of the intermediate forms which occur in the transition from one regular figure to another (*Timaeus* 66 E; cf Taylor, *op. cit.*, p. 471; Cornford, *Plato's Cosmology*, p. 274).

4) Those who hold this theory must assume that generation

does not proceed from body, for that which has come to be from planes would not have been generated from a body.

Here, too, it is to be noted that Aristotle neglects the fact that it is not planes *alone* which constitute corpuscles, χώρα delimited by the planes provides the volume of the corpuscles and the qualities are the result of the influence of the ideas upon this "field." Even so, to be sure, corporeality is no "element" in the construction of the corpuscle, it is a phenomenon resulting from that construction Aristotle is, of course, objecting to the fact that Plato does not have a "prime matter" like his own material substrate, and in this observation he is right, but, since on his own theory all the characteristics of body are the results of the combinations of the contrary qualities and the inseparable prime matter is merely the potentiality of these various combinations elevated to a quasi-substantiality by the logical analogy which makes it the "subject" of adjectival determinations, if the qualities be abstracted, this substrate cannot be corporeal either.[92] Corporeality, on this theory too, is really the result of a construction.

5) This theory must also assert that not every body is divisible and so must contradict the most exact sciences (i e. mathematics) which assume that even the intelligible is divisible, while these theorists in order to save their hypothesis will not allow even all the sensible to be so. The fact is that anyone who gives a shape to the elements by which to distinguish their essence must make them indivisible, for when a sphere or pyramid is divided what remains is not a sphere or pyramid, so that *either* a section of fire will not be fire but there will be something prior to the element *or* not every body will be divisible

The appeal to mathematics is invalid so far as Plato is concerned (and the same is true for the Atomists), since the hypothesis of physically indivisible planes does not deny unlimited mathematical divisibility; Aristotle's argument here implies the

[92] From the fact that his predecessors, both monists and pluralists, those who treated the simple bodies as ultimate and those who generated them (among whom Plato would be included), made use of the mechanism of ποιεῖν—πάσχειν Aristotle tries to prove the necessity for such a substrate of the contrary qualities (*De Generatione* 322 B 6-21, cf *Crit Pres. Phil*, pp 90-91).

thesis that what is divisible in thought must be *a fortiori* actually divisible (n. b *αἱ μὲν γὰρ καὶ τὸ νοητὸν . . . οἱ δὲ οὐδὲ τὸ αἰσθητὸν . . .*). Furthermore, inasmuch as Plato expressly asserts that the simple bodies are not elements but complex constructions, the fact that a section of fire is not fire does not mean that he has to admit something prior to the element The fact is that Aristotle in this objection is passing beyond specific criticism of Plato, from criticizing the indivisibility of the planes he is led to argue generally against all theories of differentiation of the elements by figure (the alternatives *σφαῖρα—πυραμίς* for fire indicate that both Atomists and Platonists are meant); as coming within this classification, Plato, he maintains, must make not merely the triangles but rather the corpuscles indivisible (cf 304 B 2-6) in order to avoid dividing fire into parts which are not themselves fire, but, on the other hand, if this method be adopted (as Xenocrates did adopt it), then one has to deny that all body is divisible.

Aristotle now generalizes his argument expressly to show that any attempt to give the simple bodies determinate figures is unreasonable

De Caelo 306 B 3-307 B 19

1) The universe will not be completely filled by these bodies if they have such figures, for only two solids, the pyramid and the cube, can completely fill a space but since there are more than two simple bodies, more than just these two solid figures must be assumed.

This argument is valid only against the four regular solids of the Platonists, although it is introduced as an objection to all attempts to assign figures to the simple bodies; against Plato it is certainly valid, if—as Aristotle clearly supposes—Plato assumed that the universe is a plenum. The attempt to answer Aristotle's objection by asserting that the *Timaeus* does assume the existence of "empty interstices" (A. E Taylor, *A Commentary on Plato's Timaeus*, p. 405) cannot be supported by the words of Plato (cf. *Timaeus* 59 A, 60 C, 79 B, 80 C) who apparently thought that the interstices between the corpuscles could be completely filled up because the variations in the size of the triangles of any one class would provide corpuscles of so many sizes as to make the number of arrangements practically unlimited (58 A-B, cf. 57 C-D)

2) Secondly, the observed fact that the simple bodies, especially water and air, take on the shape of the inner surface of their containers proves that the shape of the element cannot be constant, for it would not everywhere be in contact with the container. On the other hand, if figure is its defining characteristic, it cannot change its shape without ceasing to be what it is, e g. water. That the shape of the elements is therefore not determinate is clear, as their nature also indicates The elements are the matter of the compound bodies and so, like every substrate, must be without form of their own (for this Aristotle appeals to the statement in the *Timaeus* 51 A to the effect that the πανδεχές would be best fitted for being "shaped" by having no shape of its own); it is in consequence of this that they are able to change into one another when their qualitative differentiae are displaced (cf. *De Generatione* 322 B 12-19, 331 A 12-332 A 2).

This argument depends upon the confusion of the mass of a simple body, a given volume of air or water, with the corpuscles or atoms of which that mass is composed, the apparent "reshaping" of a volume of water proves nothing about the possible shape or shapelessness of the invisible corpuscles which compose that volume The motive for Aristotle's assumption, however, is revealed by the argument from "the nature of the simple bodies"; as the "matter" of compounds which are homogeneous continua they must themselves be homogeneous continua and, therefore, not determined by any figure. If a certain corpuscle is water by reason of its shape, any mass of water must be water for the same reason; and, if a volume of water remains water when its shape changes, it is not shape that is the specific differentia Aristotle simply disregards the fact that the "shape" by which the mass of water is distinguished is not the shape of the mass but the shape of the corpuscle The concomitant continuity, i e infinite divisibility, of quantity and quality is the thesis which forms the foundation of this objection as of the next (cf the connection of quantitative and qualitative continuity in *De Caelo* 299 A 17-24).

3) Such a theory cannot account for the production of such continuous bodies as flesh, etc., for it cannot generate them from the simple bodies since continuity does not result from

mere collocation, nor can it produce them from the planes since by collocation of the planes it produces the simple bodies themselves (see note 80 *supra*) [93]

The problem here raised is real Aristotle, himself, thought that he had solved it by assuming the continuity of matter and working out a theory of "chemical combination" (μίξις) based upon the notion of various stages of equilibrium in the transmutation of the simple bodies (*De Generatione* 334 B 8-30). Plato, who assumed no such "material substrate" as Aristotle's, could not assume any continuity of matter For him what appeared to be the continuity of matter was really the continuity of extension, of χώρα, while the qualitative continuity which Aristotle so closely connects with the infinite divisibility of the substrate was by Plato considered to be the result of that mysterious appearance in extension of the likeness of the ideas. But these, as usual, Aristotle completely neglects when he attacks the details of the Platonic physics

4) The shapes that such theories assign to the bodies are not suitable to them. Because fire is mobile, produces heat, and burns, some made it a sphere (i e. the Atomists) and others a pyramid (the Platonists) These figures are, according to those

[93] The upshot of such a theory is the annihilation of generation, says Aristotle In *De Generatione* 326 B 29 327 A 25 he lays it down that the explanation of generation and of ποιεῖν—πάσχειν in general depends upon the principle that one thing being *potentially* what another is *actually* the former must be *pervaded throughout* by the capacity of being acted upon, although the degree of this potentiality may vary in various parts of the body If there were an indivisible body or plane (Aristotle here uses πλάτος instead of the more usual ἐπίπεδον), it would not be susceptible throughout, but, since all body is divisible, the theory that action—passion occurs only at the points of contact of the constituent parts (i e Plato, cf 325 B 32) reduces to the doctrine that body is susceptible throughout its whole extent Nevertheless, Aristotle proceeds, to suppose that action—passion occurs by the mechanical disruption of bodies is absurd, for it does away with alteration (cf 315 A 29 33 where Plato is charged with having disregarded alteration and growth) He appeals to sense-perception for the proof that the same continuous body is now liquid and again solid and does not undergo this change by division and concretion or by the mechanical rearrangements posited by Democritus Similarly, such theories cannot account for growth and wasting, for, since each and every part grows or diminishes, these processes imply not mere accretion (or dissipation) but the change of the entire organism whether by the intermixture of a foreign body or alteration in itself.

who assign them to fire, most mobile because they have least contact with other bodies and least stability (cf *Timaeus* 56 A *τὸ μὲν ἔχον ὀλιγίστας βάσεις*), most capable of heating and burning because the one (i.e. the sphere) is all one angle and the other has the "sharpest" angles (cf *Timaeus* 56 A-B, 61 E), and they heat and burn by means of the angles. Now even if these shapes are the most mobile, they are not so with respect to the motion of fire which is upward in a straight line, these are, rather, most suitable for a rolling motion. Then, too, if earth is a cube because of its stability (cf *Timaeus* 55 D-E) but is stable and rests not everywhere but only in its own place and moves, if not prevented, from an alien place, just as fire and the other bodies do too, then fire and each of the elements must be a sphere or a pyramid in an alien place and in its own natural place a cube.

Aristotle assumes without question his own theory of absolute directions and absolute weight and lightness which Plato expressly denied (*Timaeus* 62 C-63 E) and which therefore cannot be used as a means to criticize the particular figures of the corpuscles. Even though Plato does assume that earth drifts toward the center and fire toward the circumference of the universe (see note 393 *infra*) and that in the region of fire it would be easier to dislodge from that region a portion of earth than it would a portion of fire, Aristotle is not justified in assuming that a corpuscle of earth within the region of fire would be less stable than a pyramid of fire. As Proclus pointed out (*apud* Simplicius, *De Caelo*, p. 663, 3-15), Plato does not, as does Aristotle, suppose that any of the "elements" are at rest in their natural places nor does he assign to them a natural movement in straight lines to and from the center.

5) If fire heats and burns because of its angles all the elements should produce heat, although in different degrees perhaps, for all the figures such as the octahedron and the dodecahedron have angles, Democritus considered even the sphere to be a kind of angle which cuts because it is mobile. The result would be that the elements would differ from one another only in degree.

This attempt to show that his predecessors reduced qualita-

tive difference to a mere difference of degree has already been frequently noted in Aristotle's criticism (cf also *Crit. Pres. Phil.*, p. 98, n 413 for his attempt to prove in the same way that Democritus must assign relative heat to all the atoms) [94] Plato, of course, did not consider heat to be a result of angularity as such (cf *Timaeus* 61 E-62 A)

6) A concomitant result of such theories must be the admission that mathematical solids heat and burn, for they have angles too and there are among them atomic spheres and pyramids especially if there are atomic magnitudes, as is said At any rate, he adds, if some do and others do not have these effects, one ought to say what the difference is and not speak without qualification as these theorists do.

The difference is simply that the corpuscles are material and mathematical tetrahedra are not, Aristotle's last words show that he did not take this argument very seriously himself The reference to " atomic magnitudes " may indicate that Aristotle is thinking particularly of Xenocrates in this connection and the next objection seems to support this conjecture.

7) If that which is being burnt is set on fire and fire is a sphere or a pyramid, what is being burnt must become spheres or pyramids; but it is as absurd to suppose that the pyramid by cutting or dividing produces pyramids or the sphere spheres as to postulate that a knife divides things into knives.

This objection is absurd if it be meant as a refutation of Plato's theory, according to which the corpuscles are broken down into their constituent faces which then may recombine to form corpuscles of another kind (with the exception of the cubes; cf *Timaeus* 56 C-57 C); Aristotle's objection to the

[94] Aristotle's belief that the different sounds are irreducible qualities and his objection to any attempt to explain them as quantitative relations is the basis for his statement in *De Anima* 420 A 31-33 that the high tone is not identical with the swift or the low tone with the slow movement (on *De Gen Animal* 786 B 25-787 A 22 cf Rodier, *Traité de l'Ame*, II, p 500), a remark which seems to be aimed at once at Plato, *Timaeus* 67 B ὅση δ' αὐτῆς (*scil* κινήσεως) ταχεῖα, ὀξεῖαν, ὅση δὲ βραδυτέρα, βαρυτέραν (cf 80 A καὶ ὅσοι φθόγγοι ταχεῖς τε καὶ βραδεῖς ὀξεῖς τε καὶ βαρεῖς φαίνονται .) and at certain musical theorists quoted in *Topics* 107 A 15-16: φωνὴ μὲν γὰρ ὀξεῖα ἡ ταχεῖα, καθάπερ φασίν οἱ κατὰ τοὺς ἀριθμοὺς ἁρμονικοί (Alexander, *Top.*, p 106, 24-27 identifies them as Pythagoreans) Cf Adrastus *apud* Theon Smyrn, p. 50, 4-12 (Hiller).

" suspension " of the planes (306 A 20-23, cf. also the objection at 299 B 23-31) shows that he was aware of this feature of the mechanism. Xenocrates, however, made the corpuscles atomic, in that case his theory would be open to some such difficulty as is here urged, and it may be that this is what Aristotle has in mind. The method by which Xenocrates provided for the interchange of the simple bodies is not known, and so it is impossible to say whether Aristotle's objection would be valid as against it or not (on the inclusion of the " spheres " of the Atomists cf. *Crit. Pres. Phil.*, p 100, n. 418).

8) It is ridiculous to assign a figure to fire on the basis of its tendency to divide; it unites rather, for while it divides the heterogeneous it combines the homogeneous The latter moreover is an essential characteristic of fire, the former being merely incidental, so that either both or only the characteristic that is essential should have been considered.

This arbitrary assertion of Aristotle has no weight as the basis of criticism; in *De Generatione* 329 B 26-30 he tries to establish this doctrine from the general opinion that fire divides, by arguing that, since to divide is to eliminate what is ἀλλότριον, the essential nature of the process must be the combination of the homogeneous The argument is on a level with Aristotle's attempt to prove that the " Strife " of Empedocles is really the cause of " natural " movement (*De Generatione* 333 B 26-33, cf. *Crit. Pres. Phil.*, p. 188)

9) Since the hot and the cold are contraries, it is impossible to assign any figure to the cold, for it would have to be the contrary of that assigned to the hot and there is no contrary to a figure. That is why all these theorists have neglected the matter, although either everything or nothing should be distinguished by figure.

The same argument is used against the Atomistic explanation of the various sensible qualities by means of the varying shape of the atoms (*Parva Naturalia* 442 B 17-21); it is noteworthy, however, that, when Aristotle is trying to find his doctrine of contraries in the systems of all his predecessors, he recognizes it in the Atomistic " distinction by figure," for figure is a γένος ἐναντίων (*Physics* 188 A 23-25, n. b. Plato in *Philebus* 12 E

speaks of a contrariety of figures which is the same as the contrariety of white to black). Apart from this, however, it is plain that Aristotle is here speaking of hot and cold in the sense in which those contraries are used in his own system and that he thus assumes as the foundation of his criticism an hypothesis to which neither Plato nor Democritus would subscribe. The latter made heat and cold merely epiphenomena, and Plato, who considered them to be objective, did not assign a figure to "the hot" but to the corpuscle of fire and accounted for cold without assuming any special body with a particular figure to be the vehicle of this quality. Aristotle, however, to whom fire was just the combination of the two qualitative terms hot---dry, was required by his principle of potentiality--actuality to assume the existence of a body which was the combination of the contraries of these qualities, cold--moist; and he assumes that all of his predecessors were bound to treat these "contraries" in the fashion in which they had to be treated in order to play the parts given them by the mechanism of his own system (cf. the similar argument against the Atomists in *De Generatione* 326 A 3-6 [cf. *Cat. Pres. Phil.*, p. 97, n. 410]).

10) Some do try to explain this quality but contradict themselves in doing so; they say that what has large particles is cold because instead of passing through the pores it compresses them, in which case it is clear that the hot should be that which penetrates and that is always the subtle. In that case hot and cold differ by reason of size and not by reason of the figures. Furthermore, if the pyramids are of varying sizes, the large ones would not be fire nor would the figure be the cause of burning but the very opposite.

This is meant to be a criticism of *Timaeus* 62 A-B, in the course of which Aristotle attempts to use Plato's assumption of triangles and corpuscles of varying size within each class (*Timaeus* 57 C-D) to develop an inconsistency in the system. Aristotle, however, does not give an exact account of the *Timaeus* here; he represents Plato as supposing that cold is a direct result of the inability to penetrate the passages of the body, whereas according to the *Timaeus* it is produced by the condensation of the liquid within the body which is rendered motionless by the pressure of the larger bodies and by its

counter-pressure induces shivering and the symptoms of freezing. By neglecting the exact details of this account Aristotle is able to argue that since cold is a result of the failure to penetrate a body, heat, its contrary, should be the result of the ability to penetrate, in which case these qualities are really the results of the size of the particles; from this position he then can argue that, since there are large and small pyramids, the large ones, being unable to penetrate a body, must produce cold and so cannot be fire To the fact that Plato recognizes species of fire, i e. pyramids of certain sizes, which do not produce combustion (cf. *Timaeus* 58 C) he pays no attention whatsoever. He is satisfied that this refutation has proved that Plato, like Democritus and the material monists, in reality makes the differences of the simple bodies nothing but the varying degrees of largeness and smallness

The basic principle which Aristotle seeks to establish in the last two books of the *De Caelo* is the existence of essentially different kinds of matter, equal in number to the simple bodies, which while different in actuality are still one in potency (*De Caelo* 312 A 30-33, cf. 17-21), this alone can explain the interchange of the simple bodies and the eternity of the world of change and it is supported by what Aristotle considers to be the incontrovertible evidence of absolute weight and lightness and the different natural motions which are the manifestations of these specific differences of matter The frequently repeated objection to the theories of Plato and the Atomists, that they distinguish the simple bodies by quantitative difference and so assume in reality that all matter is essentially one, is a result of Aristotle's notion that qualitative difference is ultimate in the existence of matter itself; this thesis is most easily proved by the unresolvable differences of the four simple bodies which are the primary actual existences of the sublunar world The argument of the fourth book of the *De Caelo*, therefore, is crucial for Aristotle's system; if the Platonic and Atomistic theories of a qualitatively undifferentiated matter can be shown to be incapable of "saving the phenomena" of weight, it will have been proved necessary to assume the Aristotelian doctrine of the ultimate *qualitative* difference of the simple bodies.

Heavy and light in the unqualified sense, of which Aristotle

says no one has taken account (*De Caelo* 308 A 9-13) although those who approached the problem supposed that their statements about *relative* weight amounted to a determination of absolute weight and lightness (308 A 34-B 3), depend upon the existence of absolute directions, of an absolute "up" and "down" in the universe, so that Aristotle has first to defend against Plato's attack the assumption of such directions before he can indict Plato for failing to explain the phenomenon of absolute weight. Plato himself had begun his explanation of weight by attacking the false distinction of "up" and "down" as natural divisions of the universe (*Timaeus* 62 C ff.); Aristotle says that it is absurd to argue that there is no "up" and "down" in the universe because it is every way similar (cf *Timaeus* 62 D 10-12) and because a person walking about the center would from every point come to be antipodal to himself (cf. *Timaeus* 63 A 2-4), but the only "proof" which he gives of the existence of these absolute directions is that "since the universe has an extremity and a center, it *obviously* will have an up and down." The extremity, which is "above" in position and naturally primary, he calls "up" (cf. 284 B 21-285 A 25; n b 285 B 19-23 where the South Pole of the universe is "up" and the North Pole "down," see Appendix VIII, page 541 *infra*), in this way he defends against Plato the common usage, which, however, is inadequate inasmuch as it takes into account only the hemisphere above us and not the whole circumference.

De Caelo 308 A 17-29

It is remarkable that Aristotle, after having taken account in this fashion of the remarks about directions with which Plato introduces his explanation of weight, pays no attention to the theory of relative weight worked out in this section of the *Timaeus* but instead gives as the theory of the *Timaeus* the notion that weight varies directly with the number of the constituent triangles (cf 299 B 31-300 A 7, pages 137 and 138 *supra*). They say that lead is heavier than wood in the same way that one homogeneous body is heavier than another, relative weight depending upon the relative number of homogeneous parts, for all bodies are composed of the same constituents and a single material. To this Aristotle

De Caelo 308 B 3-29

replies that the problem of absolute weight and lightness remains untouched. Fire is always light and moves upward, earth and all earthen things always move downward to the center, the fewness of the triangles (which, they say, are the constituents of all these simple bodies) cannot be the reason for the natural upward movement of fire, for then a larger quantity of fire would move less and be heavier since it would consist of more triangles, whereas the fact is that the greater the quantity of fire the lighter it is and the more swiftly it rises while a smaller quantity will move downward more quickly than a large one Moreover, on this theory, since air, water, and fire are constructed of the same triangles differing only in the number involved and relative weight varies directly with the number of homogeneous parts, there will be a quantity of air which is heavier than water, but this is contrary to the facts, for the upward movement varies directly with the quantity of air and *any* portion of air moves up out of water

The Platonists and the Atomists, the two schools with whom Aristotle is exclusively concerned in regard to the problem of weight, are compared here too to the disparagement of the former (308 B 30-32) Since some small bodies are heavier than those of greater bulk, it is obviously not adequate to say that bodies of equal weight consist of an equal number of primary bodies, since they would then have to be equal in bulk (for Plato does not admit a void); and it is further absurd to say that bodies which have weight consist of primary indivisible planes Those who make the primary atomic constituents solids can more easily assert that the larger is the heavier; and, since the smaller body is sometimes heavier, their assumption of an enclosed void enables them to advance an explanation of this phenomenon (cf *Crit. Pres. Phil.*, pp. 210-212). Those, however, who deny the existence of a void give no explanation of absolute weight and lightness or of the fact that some bodies always move upward and others downward; they make no mention of the fact that some small bodies are heavier than some large ones; and it is not clear how from what they

De Caelo 308 B 32-309 A 2

De Caelo 309 A 21-27

have said it would be possible for them to bring their statements into agreement with the phenomena

Any explanation of relative weight must fail, Aristotle concludes, which assigns the same matter to all things or, in assuming more than one material, assumes only a pair of contraries. If there is only one matter, as there is for those who make the triangles the constituent elements, there can be nothing absolutely heavy or light. If there are only two contrary materials (e g the void and the plenum), it will be impossible to explain how the bodies intermediate between the absolutely heavy and light are heavier and lighter than one another and the simple bodies; and, if the relative weight be explained by the relative size of the constituents, all the difficulties of material monism reappear (cf. *Crit. Pres. Phil.*, p. 213) Unless there is more than one matter, there can be nothing absolutely light, nothing that moves upward naturally, all bodies would have weight as some maintain (*De Caelo* 311 B 13-29, cf *Timaeus* 63 E and *Crit. Pres. Phil*, p 209, n 247), although the phenomena testify that fire has *no* weight and earth *no* lightness.

De Caelo 309 B 29-310 A 13

So there must be different kinds of matter equal to the number of simple bodies A single matter, void or plenum, magnitude or triangles, would allow only a single motion for all things and there would be nothing absolutely light or nothing that always moves downward, whereas it is clear both by the evidence of the senses and by demonstration that there are always and everywhere both downward and upward motions. Furthermore, it would be possible for some of the intermediate bodies to move downward more swiftly than earth, for in a large quantity of air there would be more triangles or solids or small particles; but obviously no quantity of air moves downward Nor will the assumption of two kinds of matter explain the action of the intermediate bodies air and water, for there would be some quantity of air that would descend more swiftly than a little water; and this is contrary to experience A different material must be assumed to correspond to each of the four simple bodies

De Caelo 312 B 19-313 A 13

in order to account for absolute weight and lightness and the consequent natural motion of each relative to the others.

Aristotle's assumptions of absolute position and natural motion with the corollary that no quantity of air can be as heavy as the smallest quantity of water nullify his arguments against Plato's theory of relative weight. Since his refutation of the theory of weight as relation rests entirely upon the evidence for weight and lightness as absolute qualities and since this evidence as presented is merely a misinterpretation, his case is not made out That, however, is not for our present purpose the most significant characteristic of the critique. The complete neglect of what is expressly given in the *Timaeus* as the explanation of weight and the substitution for it of a theory constructed from a single passing remark show not only the invalidity of the arguments in refutation but also the untrustworthiness of Aristotle's presentation of Platonic doctrine Aristotle not only does not meet Plato's reasons for rejecting absolute weight and lightness; he does not mention the fact that this notion is expressly rejected by Plato, that a mechanism of "attraction" (see note 393 *infra*) is the foundation of Plato's theory of relative weight, that the Platonic theory explains how the movement of a large quantity of fire away from the region of earth can be swifter than that of a small one without requiring the assumption of absolute weight and lightness. Besides, the theory of weight which he attributes to the *Timaeus* is, in fact, inconsistent with the "theory of triangles" in that dialogue, although Aristotle does not notice this either, for, if it were the relative number of similar triangles which determined weight, earth would be incommensurable with the other three bodies inasmuch as neither the faces of the corpuscles nor the ultimate triangles of earth are similar to the faces or ultimate triangles of water, air, and fire.

The Platonic physics which Aristotle criticizes is exclusively the physics of the *Timaeus* for the interpretation of which he apparently had no further resources than has the modern interpreter In identifying the χώρα of that dialogue with "matter" he does once refer to certain "unwritten doctrines" but only

to assert that the discrepancy of terminology between these and the *Timaeus* does not affect his criticism, the participant which, according to Aristotle, plays the part of "matter" in the dialogue was in the "unwritten doctrines" called "the great and the small," but he represents the participant in both cases as being τόπος-χώρα which he considers to have been identified in the latter in the same way as in the former. Certainly he saw nothing in the "unwritten doctrines" to prevent him from identifying the participant called "the great and the small" with the participant called χώρα in the *Timaeus*; and his criticism in both cases assumes a relationship between the ideas and "the great and the small" identical with that between the ideas and χώρα in the dialogue (*Physics* 209 B 13-16, 209 B 33-210 A 2; cf Baeumker, *Problem der Materie*, p 199, n 1). Similarly, he identifies τὸ ἄπειρον with "the great and the small" as Platonic "matter" (*Physics* 203 A 1-16, *Metaphysics* 987 B 25-27, 988 A 11-14) and makes an objection to this ἄπειρον which indicates that he conceived its relationship to the ideas to be the same as that of χώρα or "the great and the small" (*Physics* 207 A 29-32, see pages 118-122 *supra*) The χώρα of the *Timaeus*, the ἄπειρον which we find used by Plato in the *Philebus*, and "the great and the small" of the "unwritten doctrines," then, Aristotle identified and represented as Platonic matter For the content of the "unwritten doctrines" we have no evidence beyond Aristotle's own words; the ancient commentators merely repeat his statements or add conjectures of their own[95] According to Alexander, however, "the great

[95] Themistius (*Phys*, p 106, 21-23) says that in the "unwritten doctrines" the manner in which "matter received the ideas" was different from that given in the *Timaeus*, for in the latter it was κατὰ μέθεξιν and in the former καθ' ὁμοίωσιν According to Zeller (*Phil Greek*, II, 1, p 439, n 2) this is a mere conjecture, whether of Themistius himself or someone else, but Robin (*Idées et Nombres*, n 334 [p 423]) thinks that it may have 'some connection with the doctrine according to which the rôle of the formal principle is to equalize or *assimilate* in some fashion the unequal terms which constitute the material principle" Plato, however, in the dialogues uses the metaphor of ὁμοίωσις as equivalent to that of μέθεξις (cf *Phaedrus* 250 A-B, *Parmenides* 132 D, 133 C 8-D 2 [cf *Phaedo* 100 D 5-8, *Symposium* 211 B], Shorey, *Unity*, p 37 and *A J P*, X [1889], pp 66-67), and Aristotle, far from supporting the asser-

and the small" and "the one" appeared as the principles of all things in the περὶ τἀγαθοῦ (Simplicius, *Phys.*, p. 151, 6-8 and pp. 454, 19-455, 11, Alexander, *Metaph.*, pp 55, 20-56, 35); and Porphyry undertook to interpret the enigmatic statements of this lecture in connection with his commentary on the *Philebus* (Simplicius, *Phys*, pp 453, 25-454, 19) In this fragment of Porphyry τὸ μέγα καὶ τὸ μικρόν (equated with τὸ μεῖζον καὶ τὸ ἔλαττον) is one aspect of the infinite (τὸ ἄπειρον) of which others are τὸ μᾶλλον καὶ τὸ ἧττον, τὸ σφόδρα καὶ τὸ ἡρέμα. "The great and the small" represents the unlimited divisibility and concomitant inverse additive infinity of continuous quanta, and this double progression is an example of the ἀόριστος δυάς; this is likewise present in numbers, since the first number, two, is even and even number comprises the double and the half and so excess and deficiency. The first even number *per se*, i e. *qua* duality, is unlimited but, inasmuch as it is a single number, it is limited by participation in "the one" The dyad and the one are, consequently, the elements of number also

Here there is nothing at variance with the doctrine of the *Philebus* (24 A-26 D) nor any essential addition to it except for the application of the principle of indefinite and limit to numbers in such a way as to imply the possibility of a derivation of the number series. There is no intimation, however, that the principles of numbers, *as such*, are the principles of all other things. But this is definitely given as the foundation of

tion of Themistius, in one passage even ascribes to the Pythagoreans the mechanism of μίμησις and says that Plato substituted for it μέθεξις, although this was only a change of terminology (*Metaphysics* 987 B 9-14, cf. *Crit Pres. Phil*, p 392), nowhere does he suggest any such discrepancy between the *Timaeus* and the "unwritten doctrines" as is asserted by Themistius Philoponus adds nothing, he says that Aristotle himself compiled the ἄγραφοι συνουσίαι, by which term he glosses ἄγραφα δόγματα (*Phys*, p 521, 14-15, cf *ibid*, 9-10 and p 515, 30) but his remarks elsewhere (*De Generatione*, p 27, 8-11 and p 226, 25-30) show that, apart from Aristotle's statement in the *Physics*, he had no knowledge of their contents Simplicius, too, refers to them as ἄγραφοι συνουσίαι but outdoes Philoponus, who says that they were compiled by Aristotle, by identifying them with the περὶ τἀγαθοῦ (*Phys.*, p. 542, 9-14, p 545, 23-24) his knowledge of which was derived from reports of Alexander and Porphyry (*Phys*, p. 454, 17-22 [cf p 453, 25-31], p. 151, 6-8 and Simplicius' own remarks, p. 151, 12-19; see note 77 *supra*)

the Platonic theory in the fragment of Alexander (*Metaph*., pp 55, 30-56, 8; Simplicius, *Phys*., p 454, 22-29). This report of Alexander which has been taken as significant evidence for Plato's later philosophy (e g Stenzel, *Zahl und Gestalt*, pp 66 ff) presents in many respects an exceedingly suspicious appearance In the first place it attributes to Plato the argument that number is primary because the points as limits of the line are prior to the line and points are " monads with position " (Simplicius, *Phys* , p. 454, 22-26, Alexander, *Metaph*., p 55, 20-26), whereas Aristotle testifies that Plato rejected the point as an entity and tries to prove that the Platonists must nevertheless accept it if they accept the line, using for this proof the very argument from the limits here attributed to Plato to support the priority of the point (*Metaphysics* 992 A 20-24) In the second place, the *number* two, of which the principles are said to be " the one " and " the great and the small," is said to be the ἀόριστος δυάς by reason of the fact that it partakes of " the great and small " and so has τὸ μᾶλλον καὶ τὸ ἧττον (Simplicius, *Phys*., p 454, 28-36), although it is the ἀνισότης consisting of " the great and small " which is called the ἀόριστος δυάς and which, when limited by " the one," becomes the *number* two, according to the other passage of Alexander (*Metaph*., p 56, 17-33), as later in this passage (Simplicius, *Phys*., p 455, 5) the ἀόριστος δυάς is *identified* with " the great and small." Thirdly, Alexander makes the first product of " the one " and " the great and small " mathematical number and gives no explanation of how these principles of all things account for the ideas, save that he identifies the ideas with these numbers, although Aristotle distinguishes the two classes and complains that Plato never explained how or from what mathematical number is generated since it cannot have " the great and small " for a principle (*Metaphysics* 1090 B 32-37) The beginning of Alexander's account (*Metaph*., p 55, 20) indicates that, in making numbers the principles of all else and so the principles of mathematical number the ultimate principles, he is running together and probably confusing Platonic and Pythagorean doctrines.

These reports of the περὶ τἀγαθοῦ are, consequently, of little

use as a supplement to Aristotle's statements So far as the material substrate is concerned they add nothing. On *Metaphysics* 988 A 11-14 Alexander says that the material principle of sensibles is the indefinite dyad which is " the great and the small " (*Metaph*, p 59, 20-23); and the indefinite dyad is said to represent the nature of the ἄπειρον because " the great and small " is unlimited (Simplicius, *Phys*, p. 455, 9-11)

Although Aristotle identifies " the great and the small " with τὸ ἄπειρον (*Physics* 203 A 15-16, *Metaphysics* 987 B 25-27), there are passages in which it is represented rather as one phase of the more general " excess and deficiency " (cf 187 A 16-17, 189 B 8-16 [cf 189 A 7-9]), and this is more in accord with the *Philebus* where " the greater and smaller " is one aspect of the ἄπειρον, the essence of which comprehends τὸ μᾶλλον καὶ τὸ ἧττον generally (*Philebus* 25 C-D; cf. *Politicus* 283 C-D: μήκους τε πέρι καὶ βραχύτητος καὶ πάσης ὑπεροχῆς τε καὶ ἐλλείψεως) Consequently, while the participant is an indefinite, it is not legitimate to *identify* it with τὸ ἄπειρον and to assume that Plato's use of the latter term always implies a material principle; even vices and pleasure and pain are treated as belonging to the class of τὸ ἄπειρον (*Philebus* 26 B, 27 E; see note 175 *infra*). This is not to say that in the physics and metaphysics of Plato there are different species of τὸ ἄπειρον which serve as the substrates of different classes of entities; Aristotle knows of only one " material substrate " in Plato's philosophy, whether it be that of the ideas or that of phenomena and by whatever name it may be called (see page 123 *supra*) The word ἄπειρον, however, has ethical and logical connotations as well as a physical meaning; and, when Plato says περὶ ἕκαστον ἆρα τῶν εἰδῶν πολὺ μέν ἐστι τὸ ὄν, ἄπειρον δὲ πλήθει τὸ μὴ ὄν (*Sophist* 256 E), he does not mean that either non-being or indefiniteness is a constituent or the material principle of the idea any more than he considers τὸ ἄπειρον to be the " material substrate " of the " mixed life " (*Philebus* 27 D). Yet such a sentence as that from the *Sophist* would seem to support the notion of a " material principle " of the ideas once the narrow identification of ἄπειρον with " material substrate " had been accepted [96]

[96] So Dercyllides took from Hermodorus a passage of a logical nature (cf

At any rate, according to Aristotle's interpretation, the ἄπειρον, existing "both in sensible objects and in the ideas" is "the great and the small" (*Physics* 203 A 8-16); and "the great and the small," which is treated as a pair or a unit according to the immediate purpose of Aristotle's critique (see page 86), is the participant of the *Timaeus*, χώρα. This doctrine is criticized, on the one hand, as in effect positing a void as material substrate and making τόπος inseparable, although elsewhere Aristotle says that Plato denied the existence of a void (see pages 115-117), and, on the other hand, as mistakenly sup-

Susemihl, *Die Genetische Entwickelung der Platonischen Philosophie*, II, pp 522 ff.) and used it to support his thesis that the Platonists did not make matter a principle (cf Simplicius, *Phys*, p 256, 31-34) The passage is quoted by Simplicius (*Phys*, p 248, 2-18, cf p 247, 31 ff) from Porphyry who quoted it from the section of Dercyllides' work on Plato where the problem of matter was discussed Hermodorus set up two logical classes, τα καθ' αὐτά (e g man, horse) and τὰ πρὸς ἕτερα, which latter is divided into πρὸς ἐναντία (e g good and bad) and πρός τι (e g right and left [cf Sextus, *Adv Math* X, 265]) Of the πρὸς ἕτερα some are ὡρισμένα and others ἀόριστα (Robin, *Idées et Nombres*, p 646, compares *Metaphysics* 1020 B 32 1021 A 11) All those that have the relation of great to small have τὸ μᾶλλον καὶ τὸ ἧττον, for there is no limit to their progression in the direction of the still greater or less, and in the same way the broader and narrower, heavier and lighter, and so forth, can progress without limit (in either direction), but those having such designations as the equal, the stationary, the attuned have not τὸ μᾶλλον καὶ τὸ ἧττον but their opposites have, for the unequal, moving, unattuned admit of unlimited intensification, so that of both pairs only the single term does not admit τὸ μᾶλλον καὶ τὸ ἧττον. (The text here is corrupt; on the passage generally cf Heinze, *Xenokrates*, pp 37-40 and for Academic parallels Διαιρέσεις Ἀριστοτέλους, §§ 23, 67, 68 [*Divisiones Aristoteleae*, ed. Mutschmann, pp 34-35, 39-41, 65 66] and Hambruch, *Logische Regeln*, pp 16-17, cf also *Philebus* 24 A-25 B and *Politicus* 284 D-E) There follows the conclusion: ὥστε ἅστατον καὶ ἄμορφον καὶ ἄπειρον καὶ οὐκ δι τὸ τοιοῦτον λέγεσθαι κατὰ ἀπόφασιν τοῦ ὄντος τῷ τοιούτῳ δὲ οὐ προσήκειν οὔτε ἀρχῆς οὔτε οὐσίας ἀλλ' ἐν ἀκρισίᾳ τινὶ φέρεσθαι δηλοῖ γὰρ ὡς ὂν τρόπον τὸ αἴτιον κυρίως καὶ διαφέροντι τρόπῳ τὸ ποιοῦν ἐστιν, οὕτως καὶ ἀρχή, ἡ δὲ ὕλη οὐκ ἀρχή. διὸ καὶ τοῖς περὶ Πλάτωνα ἐλέγετο μία, ὅτι ἡ ἀρχή (repeated, *Phys*, pp 256, 35-257, 4, with ἓ καὶ . . . μία ὅτι εἷς ἀρχή) The last two sentences (δηλοῖ γὰρ etc) have been called an addition of Simplicius' (Susemihl, *op cit*, II, p 522, n 671) and are not considered with the fragment by Zeller, Heinze, or Robin, but Simplicius repeats them expressly as the conclusion of his quotation from Dercyllides, so that it is impossible to deny that he found them in Porphyry's text Since he is quoting Porphyry's quotation of Dercyllides who used the passage of Hermodorus

posing that the abstraction of the qualities of matter leaves only space (or position) which is separable whereas it really leaves an inseparable substrate in which the qualities inhere as differentiae (*Physics* 209 B 9-14, 22-32).[97] Aristotle believed not only that this χώρα was meant to play the rôle of "prime matter" but also that Plato had arrived at the notion of χώρα in the same way as he himself had reached that of his primary substrate; in *Physics* 211 B 29-36 he clearly indicates that he understood *Timaeus* 49 B-50 A to be a description of alteration intended as proof of the necessity for positing a substrate of qualitative change in which analysis Plato mistook the *place* of the change for the changing subject Aristotle's inability to understand that the theory of the *Timaeus* reckons without any material substrate of sensibles and that the ὑποδοχή is, as Plato says it is, χώρα and not his own prime matter *manquée* accounts for much of his infelicitous criticism of Platonic physics. the

as evidence for his contention that matter was not an ἀρχή for Plato, it is obviously impossible to be sure of the extent and exact words of the original passage, especially in these concluding sentences the content of which has little or no connection with the logical classifications which precede The point of interest lies in the transitional sentence ὥστε ἄσατον . . . τοῦ ὄντος, for, while τὸ μᾶλλον καὶ τὸ ἧττον and all that is typified by it may be called ἄσατον καὶ ἄμορφον καὶ ἄπειρον without doing violence to the doctrine of the dialogues (but note the combination of the *Philebus* and the *Timaeus*[1]), to call it non-being κατὰ ἀπόφασιν τοῦ ὄντος is to violate the express injunction of Plato in the *Sophist* οὐκ ἄρ', ἐναντίον ὅταν ἀπόφασις λέγηται σημαίνειν, συγχωρησόμεθα, τοσοῦτον δὲ μόνον, ὅτι τῶν ἄλλων τὶ μηνύει τὸ μὴ καὶ τὸ οὐ προτιθέμενα τῶν ἑπιόντων ὀνομάτων . . (257 B) Non-being as the negation of being Plato forcibly puts aside (*Sophist* 258 E), and the ἄπειρον of the *Philebus* and the ἄμορφον of the *Timaeus*, far from being deprived of οὐσία, are described, the one as one of the classes of ὄντα (*Philebus* 23 C), the other as that which lends phenomena what οὐσία they have (*Timaeus* 52 C) Whether this statement comes from Hermodorus, then, or, as is more likely in consideration of the purpose for which the passage was quoted, was added by Dercyllides as a "clarification" of the meaning of Hermodorus, it contradicts the words of Plato himself and cannot be taken as evidence for his doctrine of the "material substrate" Ross (*Metaphysics, II*, p 434) refers to 'the evidence of Hermodorus" for ascribing to Plato "the indefinite dyad", there is no mention of this phrase in the fragment. See further note 192 *infra*

[97] In *Metaphysics* 992 B 1-7 the objection is quite different, Aristotle attacks the implication of the terminology, "great and small," and says that it can signify only a predicate and differentiation of matter, not the substrate itself.

receptacle and the planes seem to him to be two incompatible theories and he cannot decide whether the former is meant to be "separate" from the elements or not (see page 147 and note 89); he misses, therefore, the explanation for the volume of bodies. So he overlooks too the part played by the ideas, save in so far as he confuses them with the μιμήματα to argue that they must be in space (see page 118), and objects that qualities cannot be derived from the planes (*De Generatione* 316 A 2-4)

Aristotle's own theory of matter is motivated by the desire to find a subject of contrary qualities, a substrate which by being potentially the contrary of its actual determination can account for the generation of bodies from one another. This motive he reads into all of his predecessors, the Presocratics as well as Plato; in all of them he attempts to find the doctrine of "contraries" which is fundamental for his system. Sometimes he recognizes the contrariety within Platonic "matter" itself (*Physics* 187 A 16-20, 189 A 8 [cf 188 B 27-30]); but the desire to emphasize his own distinction between substrate and privation causes him most frequently to treat as the Platonic contrariety matter and form (see pages 88-92). On the strength of this assumption Aristotle from his conception of Platonic form deduces a Platonic material principle which is absolute non-being (pages 92-96), evil (note 62), and τὸ ψεῦδος (pages 97-101); and in one case this notion of matter as the contrary of the formal principle leads him to the conclusion that the ideas themselves must have a material substrate (pages 101-104) This is merely an extension of Aristotle's principle that the logical subject implied by contrary qualifications is equivalent to a material substrate, the conception which causes him to suppose that Plato's χώρα must have been intended to represent primary matter Plato, however, gives his own reason for introducing χώρα, and it is not that which led Aristotle to posit a material substrate and to suppose that all of his predecessors must have been trying to formulate the same principle It is to save the possibility of sensible phenomena as such, the essential characteristic of which is instability and which, because they have no steadfast being of their own, must be imitations of the

real ideas, that Plato assumes a receptacle, χώρα, this receptacle is the field required by phenomena because they are merely "likenesses" The field and the ideas are the two permanent and *separate* kinds of being necessary to save the given appearance of the physical world, and Plato is emphatic in asserting that the ideas and the receptacle, the two permanents, cannot be one in the other (*Timaeus* 52 A-C) In the sensibles, themselves, then, there is nothing to correspond to Aristotle's material substrate, and that in Plato's system with which he identifies this substrate is itself expressly excluded from the ideas as they are from it.

CHAPTER THREE

Form and its Relation to Matter

Reality is analyzed by Aristotle into two ultimate aspects, matter and form, the latter of which is identified with essence, (*τὸ τί ἦν εἶναι*). The concretion (*σύνολον*) is substance only in virtue of the form which is the actualization of the material potentiality, substance, therefore, is strictly the form or essence, as actuality prior to the potency which is matter but inseparable from this matter of which it is simply the determinate aspect [98]

[98] *De Anima* 412 A 6 10 *λέγομεν δὴ γένος εν τι τῶν ὄντων τὴν οὐσίαν, ταύτης δὲ τὸ μὲν ὡς ὕλην, ὃ καθ' αὐτὸ μὲν οὐκ ἔστι τόδε τι, ἕτερον δὲ μορφὴν καὶ εἶδος, καθ' ἣν ἤδη λέγεται τόδε τι, καὶ τρίτον τὸ ἐκ τούτων. ἔστι δ' ἡ μὲν ὑλη δύναμις, τὸ δ' εἶδος ἐντελέχεια . . .* (cf 414 A 14-17, 25-27 *ἑκαστου γὰρ ἡ ἐντελέχεια ἐν τῷ δυνάμει ὑπάρχοντι καὶ τῇ οἰκείᾳ ὕλῃ πέφυκεν ἐγγίγνεσθαι*) *Metaphysics* Z investigates the claims of matter, form, and the composite to the title of substance and finally awards it to the essential form (1041 A 27-28, B 4-9) which, however, appears sometimes as the final cause and sometimes as the efficient cause (1041 A 28-32, cf 1044 A 32 B 1 where essence and final cause are one as they are in *De Generatione* 335 B 5 7 and *De Gen Animal* 715 A 4 6, *Physics* 198 A 24-27 and *De Part. Animal* 641 A 25-27 where formal, final, and efficient causes coincide). Of the characteristics of substance, matter has that of being *τὸ μὴ καθ' ὑποκειμένου ἀλλὰ καθ' οὗ τὰ ἄλλα* but not that of *τὸ χωριστὸν καὶ τὸ τόδε τι*, and on the strength of this the form rather than matter is said to be substance (*Metaphysics* 1029 A 1-30, cf 1017 B 23-26); but matter as the substrate of change is *potentially* a *τόδε τι* and so *potentially* substance (1042 A 26-B 3, 1042 B 9-11, *Index Arist* 219 A 24 ff, 785 A 46 ff) The composite is called substance only in virtue of the essential form (*Metaphysics* 1037 A 29-30) which is prior to it (1029 A 30-32, cf 1084 B 9 13 [the concretion substantially prior to matter because "nearer" to form]), and the unity of this composite substance is explained by the conception of proximate matter as the potential aspect of that which is in actuality the form (1045 A 25 33, 1045 B 17-22, cf 1050 A 15-16, *De Anima* 412 B 6-9). The problem of the unity of definition is the same and is resolved in the same way (1045 A 23-26) The essence, of which the definition is the formula, must be a unit and yet, as definable, must be composite (1039 A 14-19, 1016 A 34-35, 1043 B 34-36) These apparently incompatible requirements are satisfied if the genus exists only as the matter of its species actualized in the ultimate differentiae (1038 A 5-9, 18-30), thus every definition contains a material element and an element of actuality (1045 A 33-35), the genus and ultimate differentia which express the material and formal aspects of the unitary essence (1016 A 24-28, 1024 B 8 9 [cf 1024 A 36-B 6], 1058 A 23-25, cf *De*

It is from the point of view of his conception of the requisite characteristics of essential form that Aristotle criticizes the Platonic ideas, the larger part of this criticism constituting an integral part of his argument in establishment and defense of his own doctrine of formal cause

1 The Origin and Nature of the Platonic Ideas.

In the second book of the *Physics*, which undertakes to show that to the natural scientist knowledge of the formal cause in its character as the determinant of matter is fully as necessary as knowledge of the material cause (cf 198 A 22-B 9, 200 A 30-B 4 [with 198 A 24-29 cf. 200 A 14-15]), Aristotle opposes to the view that the nature or reality of things that exist naturally is the matter which underlies each of these things the notion that it is rather ἡ μορφὴ καὶ τὸ εἶδος τὸ κατὰ τὸν λόγον Under the former position he ranges all those theories which make earth, air, fire, water—either all together or some one or more of them—the reality of which other things are only modifications, conditions, and dispositions (cf *Metaphysics* 1014 B 26-35). It is his own theory that the form is more truly φύσις than is the matter

Physics 193 A 9-B 19

Generatione 324 B 6 9) Hamelin (*Le Système d'Aristote*, p 125) thought this relation of matter and form applied to genus and differentia " probably only a metaphor ", and C Arpe (*Das τί ἦν εἶναι bei Aristoteles*, pp 46-47) has contended, without reference to Shorey's similar argument (*De Platonis Idearum Doctrina*, p 38, n 3) that the equation of genus with matter and differentia with form does not hold *generally* for definitions " denn in den meisten Fällen existiert nach Aristoteles das γένος in der Wirklichkeit nicht." One might ask in what case " matter " exists as separate, i e unspecified, surely not in the case of φωνή, as Arpe appears to hold (n b. in 1014 A 26-35 the στοιχεῖα φωνῆς are treated as exactly analogous to τὰ τῶν σωμάτων στοιχεῖα) Arpe, like Shorey, disregards the fact that 1045 A 36-B 7 clearly restricts ὅσα μὴ ἔχει ὕλην μήτε νοητὴν μήτε αἰσθητήν to the *categories* (see note 30 *supra* and Ross, *Metaphysics*, II, p 238, Calogero, *I Fondamenti della Logica Aristotelica*, p 118, n 1). In any event, not only is the genus called " matter " in the other passages cited above (cf. also Alexander, *Metaph*, pp 428, 29-429, 36, Asclepius, *Metaph*, p. 424, 18-37 and pp 427, 28-428, 1, Ammonius, *De Interp*, p 71, 5-21) but this identification is frequently assumed in Aristotle's arguments where it is not explicitly stated (see pages 5-7, 50-53, 59-62 *supra*), if it is a " metaphor," it is a metaphor of fundamental significance especially in Aristotle's criticism of Platonism (cf also De Corte, *La Doctrine de l'Intelligence chez Aristote*, pp 233-234).

because that which exists potentially has not its own nature until it has attained the form by which one defines its essence (cf. *Metaphysics* 1014 B 35-1015 A 5; *De Part Animal.* 641 A 14-32; *Crit. Pres. Phil.*, pp. 242-246), but that he would expect the theory of Plato to be classed with the latter position in opposition to the former is indicated by the additional qualification which distinguishes his doctrine from that of Plato: the form which, according to this doctrine, is φύσις is not separable except logically from that of which it is the form.

The doctrine of the four causes developed in the *Physics* is assumed as basis of the history of previous philosophy in *Metaphysics* A (cf W. Jaeger, *Aristoteles*, p 311), where the conclusion of the account of Plato is that he used only two of the four causes, the essence and the material cause (*Metaphysics* 988 A 7-10). The Presocratics are treated as generally recognizing principles only of a material kind (983 A 6-8, 984 A 16-18) just as in the above passage of the *Physics*; but Aristotle desires also to find among his predecessors foreshadowings, however dim and inexact, of all of his four causes, and he consequently imputes a confused notion of efficient and final causality to Parmenides, Anaxagoras, Hesiod, and Empedocles (984 B 1-985 A 31, cf *Crit. Pres. Phil.*, pp. 221-223). Passing on to the Pythagoreans he thinks that their "numbers" represent an attempt to set up formal causality by the side of matter (986 A 13-21) but finally admits that they seem to have treated their elements as a kind of material cause (986 B 4-8). This initial failure he retrieves, however, by interpreting the "One" of Parmenides as a formal principle and discovering both efficient and material causality in the second part of his poem (986 B 10-987 A 2; *Crit. Pres. Phil.*, p. 220, n. 15); whereupon he returns to the Pythagoreans (987 A 13-27) and interprets their attempts at definition combined with their theory of numbers as a first adumbration of the essence or formal cause.[99]

[99] This new interpretation follows upon a summary of the account in chapters 3-5 (987 A 2-9); after his earlier treatment of the Pythagoreans Aristotle had taken leave of the ancient "pluralists" (986 B 8-10). See page 191 *infra*

The report of Plato's philosophy which follows must be read against the background of this account and as part of Aristotle's attempt to prove that no one had suggested a type of causality other than his four but that all had darkly fumbled for just these causes (988 A 20-23, cf *Crit. Pres. Phil.*, p. 351). The interpretation of Pythagoreanism thus serves as a transition to the chapter on Plato, whose system, Aristotle says, arose after the philosophies just mentioned, following them in most respects but also having peculiar characteristics, foreign to the philosophy of the Italians[100] Plato in his youth first became intimate with Cratylus and the Heraclitean doctrines that all sensible things are in constant flux and there is no knowledge concerning them; and this opinion he afterwards retained. In accepting the teaching of Socrates, who was concerned about ethical matters and not at all about the whole of nature but who within the field of his interests was looking for the universal and was the first to fix his attention on definitions, Plato conceived that the object of this procedure must be other than perceptible things for the reason that the common definition cannot refer to any of the sensibles which are constantly changing. He therefore called such things "ideas" and said that the sensibles are all called after these and in accordance

Metaphys. 987 A 29-988 A 17

[100] This sentence presents a number of difficulties τούτοις (line 30) must refer to the "Italians" as the contrast of μὲν . . δὲ . . shows, but it should naturally refer back to the philosophers already mentioned Its antecedent cannot be τὰς εἰρημένας φιλοσοφίας (line 29), however, for that phrase ought to indicate *all* the systems summarized in 987 A 2-28 and cannot stand for the Pythagorean philosophy alone which is presented as a single system in 987 A 13-27. Nor can τούτοις and τὴν τῶν Ἰταλικῶν φιλοσοφίαν refer to Pythagoreans and Eleatics together (so Bonitz, *Metaphysica*, p. 87), for the latter are not included in the résumé where οἱ Ἰταλικοί is used of the Pythagoreans alone (987 A 10 and 13; cf *Crit Pres Phil*, p 385). Most troublesome and most important, however, is the exact sense of ἀκολουθοῦσα, which could mean either that Plato consciously followed the lead of the Pythagoreans or merely that his philosophy did in fact agree with theirs For ἀκολουθεῖν in the latter sense see *Poetics* 1449 B 9-12 and συνηκολουθήκασι at *Physics* 188 B 26-27 (Cf. also ἀκολουθεῖν in the sense of following out the logical consequences of a statement or theory [*Metaphysics* 985 A 4].)

with them,[101] for it is by participation that there exist the multiplicities of things called by the same names as the ideas.[102]

[101] *τὰ δ' αἰσθητὰ παρὰ ταῦτα καὶ κατὰ ταῦτα λέγεσθαι πάντα* has usually been taken to mean "and that the sensibles are apart from these and are called after them" (so Alexander, *Metaph*, p 50, 20), but Ross (*Metaphysics*, I, p 161) points out that this requires the supplying of *εἶναι* after *παρὰ ταῦτα* whereas it is more natural to take *λέγεσθαι* with both prepositional phrases (for *παρά* in this sense he cites *Eth End* 1228 A 35 and *Cratylus* 399 A) The notion which Aristotle here reproduces is expressed in *Parmenides* 133 C-D (*ὧν ἡμεῖς μετέχοντες εἶναι ἕκαστα ἐπονομαζόμεθα*) and *Phaedo* 103 B (*νῦν δὲ περὶ ἐκείνων αὐτῶν ὧν ἕνόντων ἔχει τὴν ἐπωνυμίαν τὰ ὀνομαζόμενα*), cf *Phaedo* 102 B (*ὡμολογεῖτο εἶναί τι ἕκαστον τῶν εἰδῶν καὶ τούτων τἆλλα μεταλαμβάνοντα αὐτῶν τούτων τὴν ἐπωνυμίαν ἴσχειν*), all sensibles have their denominations after the ideas according as they participate in them (note that Aristotle follows his statement with a reference to participation as the reason, 987 B 9-10) The fact that Aristotle always speaks of the ideas as existing *παρὰ τὰ αἰσθητά* (e g 1028 B 18-21, 1078 B 15-16, 31-32, 1086 A 31-B 2) is itself a reason for not supplying *εἶναι* here, since that would make him say that the sensibles exist *παρὰ τὰς ἰδέας*. Cf also *Eth End* 1217 B 12· *τὰ μετέχοντα τῆς ἰδέας, ἃ λέγεται τῷ μετέχειν ἐκείνης*.

[102] *κατὰ μέθεξιν γὰρ εἶναι τὰ πολλὰ τῶν συνωνύμων τοῖς εἴδεσιν*. This clause purports to be Plato's reason for asserting that the sensibles *παρὰ ταῦτα καὶ κατὰ ταῦτα λέγεσθαι πάντα*. Now, the words *συνώνυμος* and *ὁμώνυμος* had different meanings for Aristotle (*Categ* 1 A 1 12), whereas Plato uses only the latter word in the dialogues (n b the Speusippean distinction which differs from that of Aristotle [Lang, *Speusippus*, p. 25 and *frag* 32; see note 47 *supra*]) In the *Timaeus* (52 A) the "second class" is called *ὁμώνυμον ὁμοίῳ τε ἐκείνῳ* (*scil.* the class of ideas), and in the *Parmenides* (133 D), just after the ideas are referred to as *ὧν ἡμεῖς μετέχοντες εἶναι ἕκαστα ἐπονομαζόμεθα*, the phenomenal particulars are called *τὰ παρ' ἡμῖν ταῦτα ὁμώνυμα ὄντα ἐκείνοις* (cf. *Phaedo* 78 E *τῶν ἐκείνοις ὁμωνύμων* and see Alcimus *apud* Diog Laert III, 13 *τὰ παρ' ἡμῖν διὰ τὸ μετέχειν ἐκείνων ὁμώνυμα ἐκείνοις ὑπάρχει*) This Platonic use of *ὁμώνυμον* is represented by Aristotle's *συνώνυμον* inasmuch as the ideas and particulars are understood to be "specifically the same" (*Metaphysics* 1040 B 32-34, 1059 A 13-14, 1086 B 10-11), although for Plato *ὁμώνυμος* when used of the relationship of sensibles and ideas meant not *merely* "synonymous" in Aristotle's sense The particular is *ὁμώνυμον τῷ εἴδει*, not *vice versa*, because it has its name and nature *derivatively* from the idea (cf. Taylor, *A Commentary on Plato's Timaeus*, p 342 [52 A 5]), but apart from the relation of sensibles and ideas Plato uses the word of several things which, though more or less different, have the same name and belong to the same class (e g the right and left sides of the body [*Phaedrus* 266 A]; the different mathematics, if *ὁμώνυμον*, are a single *τέχνη* [*Philebus* 57 B], cf *Laws* 757 B where because of the contrast, *ὁμωνύμοιν μὲν ἔργῳ δέ*, the word gets *almost* the Aristotelian significance)

One form of Aristotle's attack upon the theory of ideas is the development of

Thus far the passage is a simple account of Plato's theory and the origins from which it sprang, but with the mention of "participation," Aristotle begins to introduce an element of critical interpretation. In *μέθεξις*, he says, Plato merely introduced a change of terminology, for the Pythagoreans say that things exist by imitation of the numbers and Plato, altering the word, says "by participation." Yet what the participation or

difficulties in order to avoid which the Platonists would have to grant that the ideas and particulars are not *συνώνυμα* but *ὁμώνυμα* in his sense (991 A 5-8 = 1079 A 36-B 3, *Topics* 154 A 16-20 [cf 148 A 14-22]), a method which presumes that these two senses form an exhaustive disjunction although Aristotle himself elsewhere admits a class intermediate between *ὁμώνυμα* and *συνώνυμα* (e g *Metaphysics* 1003 A 33-B 16; cf. Alexander, *Metaph*, pp 241, 3-244, 8, the passages cited in *Index Arist* 369 A 43-49, 514 A 61-B 9, 642 A 37-40, and Robin's discussion [*Idées et Nombres*, note 171, II IV, pp 153-159]) The use of *ὁμώνυμον* in 990 B 6 — 1079 A 2 has caused trouble, however, for it seems to be used in the sense which Plato gave it (Alexander, *Metaph*, p 77, 12-13), its occurrence here, where *συνώνυμον* is expected, has been explained as Aristotle's way of hinting that the ideas are only *verbally* connected with the particulars which they are invoked to explain (cf Ross, *Metaphysics*, I, p 191, Robin, *Idées et Nombres*, note 26 [pp 606-608]), but see note 115 *infra*

The phrase *τῶν συνωνύμων τοῖς εἴδεσιν* is, then, the Aristotelian equivalent of Plato's *ὁμώνυμα ἐκείνοις*, and the *ὁμώνυμα* of the variant reading, *τῶν συνωνύμων ὁμώνυμα τοῖς εἴδεσιν*, must be regarded as a gloss which is later than the text of Alexander (cf Robin, *loc cit*) If this is so, *τῶν συνωνύμων τοῖς εἴδεσιν* must be the particulars, and the phrase must depend upon *τὰ πολλά*, which would signify the multiplicities of these various particulars (cf Plato, *Republic* 596 A: *εἶδος γάρ πού τι ἓν ἕκαστον εἰώθαμεν τίθεσθαι περὶ ἕκαστα τὰ πολλά, οἷς ταὐτὸν ὄνομα ἐπιφέρομεν*) Ross, following Gillespie, objects to this construction of the genitive as impossible and excises *τοῖς εἴδεσιν*, translating, "'the many exist by participation in their *συνώνυμα*' the Forms" (*Metaphysics*, I, p. 162) Yet *τοῖς εἴδεσιν* is in all the MSS and was read by Alexander who saw no difficulty in the construction itself (*Metaph*, p 51, 6-7) *τὰ πολλά* is here a plural substantive, the *ἕκαστα τὰ πολλά* of the *Republic* passage above, taken together as the sum of the multiplicities which constitute the phenomenal world, and the opposite of that other technical expression, *τὰ ἓν ἐκεῖνα* (*Philebus* 16 D 4), which many editors have sought to eliminate Gillespie's argument (*Journal of Philology*, XXXIV [1918], p 151) that *κατὰ μέθεξιν* requires a genitive is answered by a reference to 1031 B 18 *ἔσονται γὰρ κατὰ μέθεξιν* (see note 240 *infra*) There as here the stress is on the fact that the existence is only derivative, dependent upon an external relationship; the genitive is no more necessary than it is in 992 A 28-29 *τὸ γὰρ μετέχειν . οὐθέν ἐστιν* (cf. also *De Generatione* 335 B 14, *κατὰ τὴν μετάληψιν*).

the imitation of the ideas may be they left an open question.[103]

Furthermore, Aristotle proceeds, Plato says that apart from the sensibles and the ideas and intermediate between them are the mathematical objects, differing from the sensibles in being eternal and immobile and from the ideas in that there are many mathematicals like to one another whereas each idea itself is unique.

Since the ideas are the causes of the other things, he thought that the elements of the ideas are the elements of all things. Consequently, as matter he took the great and the small for principles and as essence the one, for it is from the former by participation in the one that the ideas are the numbers so produced.[104]

[103] Gillespie (*Journal of Philology*, XXXIV [1918], p 152) ejects τῶν εἰδῶν here also (987 B 14) as a gloss, arguing that it cannot be construed with μίμησιν but only with μέθεξιν, whereas "Aristotle clearly intends to draw a sharp distinction between the Numbers of the Pythagoreans and the Forms of Plato" Aristotle, however, has just insisted that μέθεξις and μίμησις are essentially identical, so that he can use either word in relation to the ideas Indeed, if his previous statement were taken to mean that Plato used μέθεξις to the *exclusion* of μίμησις, his own combination of the notions of imitation and participation in reporting Plato's theory would contradict this passage (cf *Metaphysics* 991 A 20-B 1, *frag* 189 [p 152, 21-24, Rose]), but he does not say that Plato never used μίμησις but only that the new term, μέθεξις, was merely a verbal variation. The present sentence, as it stands, means that neither Pythagoreans nor Plato gave any explanation of μίμησις or μέθεξις from which one could determine what the nature of the relationship between ideas and phenomena might be Granted that Plato's μέθεξις was but another name for the Pythagorean μίμησις, had the Pythagoreans explained the nature of their process, even though they did not posit ideas it would have been possible to understand Plato's μέθεξις as having the same intention as its Pythagorean counterpart

[104] ἐξ ἐκείνων γὰρ κατὰ μέθεξιν τοῦ ἑνὸς τὰ εἴδη εἶναι τοὺς ἀριθμούς Zeller (*Phil Griech*, II, 1, p 750, n 1), Gillespie (*Journal of Philology*, XXXIV [1918], pp 152 154), Ross (*Metaphysics*, I, pp 171-172) eject τὰ εἴδη Robin (*Idees et Nombres*, note 261[3] [pp 636 637]), objecting that this breaks the train of thought started in 987 B 18 (ἐπεὶ δ' αἴτια τὰ εἴδη), follows Alexander (*Metaph*, p. 53, 6 11) in understanding τοὺς ἀριθμούς to be in apposition to τὰ εἴδη (so also Bonitz, *Metaphysica*, p 93). Gillespie and Ross are right in thinking this construction awkward and even unnecessary if τοὺς ἀριθμούς was added only to show that τὰ εἴδη means Platonic ideas and not εἴδη in some other sense, e g. species On the other hand, τὰ εἴδη and τοὺς ἀριθμούς are both required here, for in line 24 Aristotle says that τὸ τοὺτ ἀριθμοὺς αἰτίους εἶναι τοῖς ἄλλοις τῆς οὐσίας is a feature of Plato's theory which agrees with that of the

At this point Aristotle proceeds to compare and contrast Plato's doctrine with that of the Pythagoreans. In making

Pythagoreans, although no such doctrine has been assigned to Plato before 987 B 18 where it is τὰ εἴδη which are αἴτια τοῖς ἄλλοις Nor is there any hint before line 24 that τὰ εἴδη are numbers in any sense unless it be in the sentence under discussion. The necessary identification can come only here, and Gillespie's argument on this score against dropping τοὺς ἀριθμούς is of itself an argument against dropping τὰ εἴδη, for, if this be ejected and the former phrase retained, there is no support for line 24 and, since the only previous reference to anything like numbers has been that to the intermediate mathematical objects, τοὺς ἀριθμούς alone here would inevitably be taken as *mathematical* numbers, which have nothing to do with the ideas. Asclepius (*Metaph*, p 48, 14-15) has τὰ εἴδη εἶναι καὶ τοὺς ἀριθμούς; but, since his commentary here is almost word for word that of Alexander *without* Alexander's sentence explaining the appositional construction of τοὺς ἀριθμούς, his καί (= i. e) may be merely a compression of Alexander's explanation.

The passage must somehow indicate that the ideas are numbers and must do so in the course of justifying the statement that the doctrine of ideas results in making the great and the small and the unit the principles of all things as matter and essence respectively How this result is meant to be achieved by the sentence appears, I believe, from a passage in *Metaphysics* M, chap 7, where the notion of substantial number is attacked by a consideration of the various ways of accounting for the constituent units of such number *Metaphysics* 1081 A 5-7. εἰ μὲν οὖν πᾶσαι συμβλῆται καὶ ἀδιάφοροι αἱ μονάδες, ὁ μαθηματικὸς γίγνεται ἀριθμὸς καὶ εἷς μόνος, καὶ τὰς ἰδέας οὐκ ἐνδέχεται εἶναι τοὺς ἀριθμούς This implies as the statement of the Platonic thesis τὰς ἰδέας εἶναι τοὺς ἀριθμούς, in consequence of which the units cannot be συμβλῆται, and this is an exact parallel to 987 A 22· τὰ εἴδη εἶναι τοὺς ἀριθμούς Then, after supporting the argument that this thesis requires units which are ἀσύμβλητοι, Aristotle proceeds to prove that the ideas *must* be numbers (1081 A 12 17) εἰ δὲ μή εἰσιν ἀριθμοὶ αἱ ἰδέαι, οὐδ' ὅλως οἷόν τε αὐτὰς εἶναι. ἐκ τίνων γὰρ ἔσονται ἀρχῶν αἱ ἰδέαι, ὁ γὰρ ἀριθμός ἐστιν ἐκ τοῦ ἑνὸς καὶ τῆς δυάδος τῆς ἀορίστου, καὶ αἱ ἀρχαὶ καὶ τὰ στοιχεῖα λέγονται τοῦ ἀριθμοῦ εἶναι, τάξει τε οὔτε πρότερας ἐνδέχεται τῶν ἀριθμῶν αὐτὰς οὔθ' ὑστέρας That is, from the fact that the one and indefinite dyad (i. e the great and the small, cf. 1083 B 24-32, 1088 A 15-17, Appendix I) are the principles of number and that the ideas are neither prior nor posterior to number Aristotle argues that the ideas must be these numbers if they are to exist, for otherwise the ideas can have no ἀρχαί at all The given principles of number must be the principles of the ideas so that the ideas must *be* the numbers derived from these principles. This, however, is the reasoning implied by the sentence in A as it stands Here Aristotle has said that the great and the small and the one are the principles because the elements of the ideas must be the elements of everything To support this statement it is necessary to show that these two ἀρχαί are in fact the elements of the ideas This is exactly what must be shown in M to prove that the ideas must be numbers, and Aristotle proves it by arguing

"one" a substance and not merely a predicate, he says, Plato spoke similarly to the Pythagoreans and in the same way as they in making the numbers responsible for the substance of the rest of things. Instead of the ἄπειρον as single, however, to posit a dyad and construct the ἄπειρον of great and small is peculiar to Plato as is the fact that he says that the numbers are apart from the sensibles while they say that the things themselves are numbers and do not place the mathematicals between them.[105] The separation of the one and the numbers from the objects (instead of treating them after the fashion of the Pythagoreans) and the introduction of the ideas came about as the result of investigation in the field of definitions (for the previous thinkers were innocent of dialectic), and making the second principle a dyad was due to the fact that the numbers—with the exception of the prime numbers [106]—are naturally produced from it as from a kind of plastic material.

that there are no ἀρχαί for the ideas *save* the ἀρχαί of the numbers. The sentence of *A* compresses this argument into the statement since it is from the great and the small by participation in the one that the ideas are the numbers (i.e. the numbers which result from these principles, cf. 1081 A 7 and Ross *ad loc.*), these are the principles of all things, as matter and essence respectively. The τούς before ἀριθμούς is required to show that the ideas are the numbers derived from these principles, not any other numbers, e.g. mathematical numbers (cf. 1090 B 32-37), εἶναι expresses the strict identification of these numbers and the ideas, for there is no question of the ideas *becoming* numbers or the numbers *becoming* ideas (cf. Zeller, *Platonische Studien*, p. 235, n. 2), as the passage from M shows.

[105] The τοὺς ἀριθμούς in 987 B 24 and 27 are the numbers identified with the ideas in 987 B 22, after which identification the αἴτια τὰ εἴδη τοῖς ἄλλοις of 987 B 18-19 can be represented by τοὺς ἀριθμοὺς αἰτίους εἶναι τοῖς ἄλλοις of 987 B 24. Standing alone τοὺς ἀριθμούς in lines 24 and 27 would be vague enough so that it could be taken to refer to "mathematical numbers", but τὰ μαθηματικὰ μεταξὺ τούτων οὐ τιθέασιν (987 B 28-29) shows that Aristotle in lines 24 and 27 is referring to Platonic numbers that do not fall into the class of the intermediate mathematicals.

[106] The words ἔξω τῶν πρώτων are susceptible of no other meaning here. Aristotle does use πρῶτος as an epithet of *ideal* number in contradistinction to mathematical (*Metaphysics* 1080 B 21-23, 1081 A 4-5), but here where he is talking of the derivation of *ideal* numbers (cf. 987 B 21-22) he cannot mean to except the very numbers the method of generation of which he gives as the reason for the Platonic choice of the dyad as the material principle. The ordinary meaning of πρῶτος ἀριθμός in Aristotle as in Greek arithmology generally is

This interpretation of the origin of the "second principle" is followed directly by the objection that the facts are just the

"prime number" (*Anal Post* 73 A 39 B 1 [cf *Metaphysics* 1020 B 4-6], *Topics* 157 A 39 B 1, *Metaphysics* 1052 A 8), but, since according to Aristotle the indefinite dyad *duplicates* (*Metaphysics* 1082 A 13-15, 1083 B 35-36), the derivation from it of the composite odd numbers presents as much difficulty as does that of prime numbers Elsewhere Aristotle asserts that the *odd* numbers could not be derived from the great and the small and even that such a derivation of them was not attempted (*Metaphysics* 1091 A 9 12, 23-25 [*cf* 1081 A 23-25]) but that the one itself was made the middle unit in the odd number (*Metaphysics* 1083 B 29-30, 1084 A 36 37) Instead of ἔξω τῶν πρώτων, therefore, in 987 B 34 we should expect ἔξω τῶν περιττῶν, and Alexander (*Metaph*, p 57, 12-16 and 22-28) interpreted τῶν πρώτων here as equivalent to τῶν περιττῶν, although admitting that the word really means "prime" or, with the addition of πρὸς ἀλλήλους, "relatively prime" (*ibid*, 16 22, cf Heath, *Greek Mathematics*, I, p 73) His reason for supposing that the word here can mean "odd," πρῶτοι γὰρ οὗτοι τῶν ἀρτίων συνήθως, derives a modicum of support from the words of Speusippus, ἐπεὶ γὰρ πρότερος ἀεί ἐστιν ὁ περιττὸς τοῦ ἀρτίου . . (*frag* 4, 24, Lang); but, since Speusippus immediately thereafter uses πρῶτος in the sense of "prime" (*frag.* 4, 26, Lang) and this is elsewhere the sense given the word by Aristotle, it seems to be impossible to assume the meaning "odd" for this one passage. Zeller (*Phil Griech*, II, 1, p 756, *n* 3) simply excises the phrase, Heinze (*Xenokrates*, p 12, n 2) held πρώτων to be an ancient corruption of περιττῶν; both desperate remedies are unconvincing in view of the absence of any variant of τῶν πρώτων in MSS and commentators Taylor (*Mind*, XXXVI [1927], pp 22 23) took τῶν πρώτων as the numbers 1 and 2 which in addition to the indefinite dyad were original *data* and supposed that Aristotle meant that these numbers were assumed while all the others were generated from the dyad; but Aristotle did not regard one as a number (*Metaphysics* 1053 A 27-30, 1057 A 2-7, 1088 A 6, *Physics* 207 B 5-8), and, besides, such an interpretation would imply that all the other integers, including the primes, were generated εὐφυῶς from the dyad, whereas elsewhere Aristotle objects that the attempts to generate any except 2 and the powers of 2 are unsuccessful (*Metaphysics* 1091 A 9-12), a passage which implies moreover that the number 2 was *not* a *datum* as Taylor supposes O Toeplitz (*Das Verhältnis von Mathematik und Ideenlehre bei Plato* [*Quellen und Studien zur Geschichte der Mathematik*, Abt B, Band I, 1931], p. 22) interprets τῶν πρώτων in the sense of πρὸς ἀλλήλους πρώτων, "relatively prime," and says "Verwendet man an unserer Stelle diese Bedeutung, so ist alles völlig klar, 2 4, 3 6, u s w erscheinen alle als Stempelabdrucke des gekürzten Paares, nach dessen Bilde sie geformt sind, 1 2." Against this thesis it is sufficient to note 1) that Aristotle's words εὐφυῶς γεννᾶσθαι imply that the πρῶτοι were derived but were not derived εὐφυῶς from the dyad, and 2) that on Toeplitz's theory all of the integers must be *assumed*, since the integer represented as an irreducible proportion (4 = 4. 1) cannot be derived, whereas Aristotle believes that it is just the integers which are derived from the indeter-

opposite. These people, says Aristotle, produce from the matter a multiplicity of things and the form generates only once, whereas it is obvious that a single table comes from a single matter while he who applies the form, though one, makes many tables just as the female is impregnated by a single copulation while the male impregnates many females, male being to female as form to matter (cf *De Gen. Animal.* 729 A 9-11, 738 B 20-27, Plato, *Timaeus* 50 D).

Upon this incidental criticism of the function of the dyad follows the conclusion for the purpose of which the chapter was written. From what has been said, Aristotle concludes, it is clear that Plato used only two causes, the essential and the material, for the ideas are the cause of the essence of the rest of things and the one is the cause of the essence of the ideas, while the underlying matter, of which the ideas are predicated in the case of the sensibles and the one in the ideas, is a dyad, the great and the small (see pages 107-108 *supra*). Furthermore, the cause of good and ill he assigned to the elements, one to each, just as some of the previous philosophers, Empedocles and Anaxagoras for example, attempted to do.

minate dyad (e.g. *Metaphysics* 1081 B 21-22. ἀλλ' ἐκ τῆς δυάδος τῆς πρώτης καὶ τῆς ἀορίστου δυάδος ἐγίγνετο ἡ τετράς).

The present passage is Aristotle's own conjecture as to the reason for the choice of the dyad as the material principle, just as διὰ τὴν ἐν τοῖς λόγοις σκέψιν is his explanation of the introduction of the ideas, ἔξω τῶν πρώτων is consequently his own limitation—not that of the Platonists—of what he considers to be capabilities of the dyad That he did not state the wider limitation, ἔξω τῶν περιττῶν might have been due, as Ross supposes (*Metaphysics*, I, p. 175), to his having forgotten for the moment the class of composite odd numbers. It is nevertheless significant that in *Parmenides* 143 C-144 A where the existence of number is deduced, the one class of numbers overlooked is that of the primes above 3. It is true that there 3 itself is obtained by *adding* 1 to 2 and that multiplication of odd by odd as well as of odd by even and even by even is employed, that there is consequently no derivation from an *indefinite dyad* but simply arithmetical production of mathematical—not ideal—numbers Nevertheless, there too the point of departure is the notion of a pair which is duality, and Aristotle will be found to treat the indefinite dyad as if it were the number 2 (e g *Metaphysics* 991 B 31-992 A 1), so that the difference between the mathematical derivation in the *Parmenides* and the process implied by the dyad as the material principle of ideal numbers is not sufficient reason for ruling out the possibility that memory of the *Parmenides* passage caused Aristotle to write πρώτων, "primes," here instead of περιττῶν.

With this outline of the origin and nature of Plato's system must be compared certain similar sketches, chief among which is that in chapter 4 of Book M. In Book A Aristotle's purpose was to show that the four causes had been adumbrated, although inaccurately and incompletely, in the principles of his predecessors. Book M, however, is concerned with the question of the existence and nature of eternal, immobile substance apart from sensible substances; on this matter, Aristotle says, there are two opinions, 1) that mathematicals, i. e numbers, lines, and so on, are substances, and 2) that the ideas are substances He then lists three specific theories 1) some make the ideas and the mathematical numbers two separate classes, 2) some make a single nature of both, and 3) still others assert that there are only the mathematical substances. The program outlined for the book is, first, an investigation of the mathematicals themselves to see *whether* they exist and, if so, *how* they exist but without considering whether they are ideas or not and without considering whether or not they are the principles and substances of things; second, a separate investigation of the ideas themselves; and, third, and this is the chief concern of the book, an examination as to whether or not the substances and principles of things are numbers and ideas The consideration of the ideas themselves, Aristotle says, will be general and only so extensive as form requires (ἁπλῶς καὶ ὅσον νόμου χάριν, cf. Ross, *Metaphysics,* II, p. 408 [add 1073 B 12: ἐννοίας χάριν]), the reason given for this is that for the most part the subject has been the common talk of popular discourses [107]

Metaphysics 1076 A 10-32

[107] Jaeger (*Aristoteles,* p. 183) argues that ὑπὸ τῶν ἐξωτερικῶν λόγων is a reference to the dialogue περὶ φιλοσοφίας Ross (*Metaphysics,* II, pp 408-10) thinks that ὑπό here like διά in διὰ τῶν ἐξωτερικῶν λόγων (*Physics* 217 B 30-31) shows that arguments rather than books are meant by λόγοι and that here the phrase refers to arguments or discussions not peculiar to the Peripatetic school as Diels contended is the meaning in *Politics* 1323 A 22 Ross goes even further, saying that here the reference "probably is to attacks on the ideas by Antisthenes and by Sophists like Polyxenus" It may be added that the verb θρυλεῖν is inappropriate for a reference to one particular book; but, while the reference is wider than any single work of Aristotle's, it is not impossible that it may *include* published works of Aristotle's or the discussions found in these works as well as those in the works of other authors It is strange, however,

In chapters 2 and 3 (1076 A 32-1078 B 6) Aristotle argues that the mathematicals can exist neither *in* the sensibles nor *apart* from them but that, nevertheless, the objects of which mathematicians treat are real since they exist materially though not actually and so, though not separate, are separable in thought He then turns to the ideas and proposes to examine "the doctrine of the ideas itself" as those who first posited the existence of the ideas[108] originally understood it; this limitation is said to consist in refraining from connecting the theory with the nature of the numbers The account of the doctrine in its "original" form is a sketch of its historical origin Those who asserted the existence of the ideas did so because they were persuaded by the Heraclitean arguments that all sensible things are in constant flux, so that if there is to be knowledge of anything there must be apart from the sensibles some other entities which are stable, for there is no knowledge of the things that are in flux Socrates, who was concerned with the ethical virtues and in treating them was the first to seek universal definitions,[109]

Metaphysics 1078 B 9-32

that Jaeger is so sure of the περὶ φιλοσοφίας and says nothing here of the περὶ ἰδεῶν although much of the critique in M is identical with what Alexander in commenting on A refers to the latter writing while Alexander refers to the περὶ φιλοσοφίας only in connection with a section in A that is omitted in M (*Metaph*, p 117, 24)

[108] The attempts of Burnet and Taylor to refer οἱ πρῶτοι τὰς ἰδέας φήσαντες εἶναι to persons other than Plato no longer require consideration See Ross, *Metaphysics*, I, pp xxxiii-xlv and II, pp 420 421, L Robin, *Revue des Études Grecques*, XXIX (1916), pp 129-165, A M Adam, *Class Quarterly*, XII (1918), pp 121 ff (especially pp 130-134), G C Field, *Plato and His Contemporaries*, pp 202-213 (Appendix II), Lodge, Robin, Shorey, and Heidel in *Proceedings of the Sixth Internat Congress of Philosophy*, pp 559 588, C J. De Vogel, *Een Keerpunt in Plato's Denken*, pp. 35 ff. On Burnet's interpretation of the *Phaedo* cf G M Grube, *Plato's Thought*, pp 291-294, a refutation of the thesis that this dialogue shows the theory of ideas to have been a Pythagorean doctrine

[109] Here in a parenthesis the Pythagoreans are mentioned, but not as having any influence on the theory of ideas or on Socrates' method Socrates was the first to attempt universal definition, Aristotle says, for of the physical philosophers Democritus merely touched on the subject to a slight extent, defining the hot and the cold after a fashion, while previously the Pythagoreans treated some few things the definitions of which they attached to the numbers. The same attitude toward the history of definition appears in *De Part Animal.* 642 A 24-31, where

naturally was searching for the essence, for he was trying to syllogize and the starting-point of syllogism is the essence. At that time the strength of dialectic had not been developed to the point of being able even apart from the essence to investigate contraries and to inquire whether contraries are objects of a single science (see pages 26-27 *supra*). To Socrates, then, may justly be ascribed two things, inductive arguments and universal definition, for these are both concerned with the starting-point of knowledge. Socrates, however, did not separate the universals or the definitions; but the others did separate them, and such entities they called ideas.

Metaphysics 1086 A 21-B 13

There is at the end of Book M a section (1086 A 21-1087 A 25) which has been suspected of not belonging to that book at all.[110] This section announces an examination of the views of those who say that there exist substances other than the sensible substances; the theories about first principles and the primary causes and elements put forward by those who treat only sensible substance are dismissed with the remark that they have, for one thing, been discussed in the physical works and, for another, do not

it is said that Democritus first touched upon the definition of substance but only casually and that in Socrates' day this procedure gained strength while the study of nature gave way to that of ethics and politics So too in *Physics* 194 A 18-21 only Empedocles and Democritus among "the ancients" are said to have touched slightly on the formal cause or essence (for Empedocles cf also *Metaphysics* 993 A 17-18, *De Part Animal* 642 A 18-22).

[110] Syrianus (*Metaph*, p. 160, 6 9) says that some manuscripts assigned the section to the beginning of Book N. Jaeger (*Aristoteles*, pp 186-199) takes the section to be the introduction to an older criticism of Academic number-metaphysics which is largely preserved in N, he believes that there is a gap between the present M, chap 10 and N but that this section of M in connection with N is a version written at Assos and later replaced by M, 1-9 (1086 A 21). Ross (*Metaphysics*, II, p 407) agrees to the extent of thinking that M, 1086 A 21,-N "forms a whole, and a whole earlier than M beginning-1086 A 18" E von Ivánka ("Der Polemik gegen Platon im Aufbau der aristotelischen Metaphysik," *Scholastik*, IX [1934], pp 520-542) argues that M 9-10 was meant to *precede* an exposition of Aristotle's own metaphysical doctrine while N was intended to follow such an exposition Ross elsewhere inclines to the solution that "1086 A 18-1087 A 25 is a fragment which does not really belong to the main structure of MN but was introduced by an early editor as dealing with the same subject" (*Metaphysics*, II, p. 470). Whatever may be the possibilities or probabilities of chronology, it is certain that, even though one may suppose that the program of

concern "the present study." The subject for examination is restricted then to the statements and meaning of those who say that the ideas and the numbers are such substances (i. e. substances other than the sensibles and apart from them) and that their elements are the elements and principles of existing things. Here another distinction is made: the doctrine which posits only mathematical numbers is reserved for later consideration; of those who assert the existence of ideas the turn of thought and the difficulty which it involves may be examined at the same time, for they make the ideas, as substances, universal and, as separable, they put them into the class of particulars also This combination of characteristics, which, Aristotle says, has already been shown to be impossible, was due to the fact that those who made the ideas universal would not make them the same substances as the sensibles.[111] In explanation of this fundamental error of the theory of ideas there follows a short account which is parallel to the "historical" passages of A, chap. 6 and M, chap 4. Those who posited ideas thought that the sensible particulars are in flux and that none of them has

1076 A 12 32 is concluded at 1086 A 21, this was intended to be merely a critical introduction (*πρῶτον τὰ παρὰ τῶν ἄλλων λεγόμενα θεωρητέον*) to a treatment which should answer the questions *πότερον ἔστι τις παρὰ τὰς αἰσθητὰς οὐσίας ἀκίνητος καὶ ἀΐδιος ἢ οὐκ ἔστι καὶ εἰ ἔστι τίς ἐστι* (1076 A 10-12)

[111] Ross follows Jaeger in excising *ὡς οὐσίας* (1086 A 33) and *οὐσίας* (1086 A 37) and in substituting *οὐσίας* for *ἰδέας* (1086 A 36). It seems wrong to change the traditional text which in lines 32-34 charges the Platonists with two impossible combinations, not one. 1) that the idea considered as substance should be universal, and 2) that the universal ideas should be separate and so particulars It was from the mistake of considering the universal to be substance that the notion of the separate ideas followed, according to Aristotle, whereas if they are separate substances they must be particulars and so not universal That no universal exists apart from the particulars and that no universal is substance are arguments used against the partisans of the ideas in 1040 B 16-1041 A 5, where Aristotle grants that if the ideas were substances they would be separate but objects that it is wrong to make the universal an *εἶδος* The connection of the thought in that passage and in this is shown by the fact that the reason there given for the mistake of the Platonists (1040 B 30-34) is the same as that in 1086 B 7-11

The reference in 1086 A 34-35 (*ταῦτα . διηπόρηται πρότερον*) is, according to Jaeger (*Aristoteles*, p 195, n 1), to 1003 A 6, and Ross (*Metaphysics*, II, p. 462) appears to agree to this, although he notes that the same point is discussed in Z, chap 13.

any stability but that the universal is apart from them and is something different. This doctrine was provoked by reason of the definitions of Socrates, although he did not separate them from the particulars. Aristotle here says that the attitude of Socrates in this regard was quite right, for without the universal one cannot attain knowledge, but the separation is the cause of all the difficulties which arise concerning the ideas; the others, however, thinking that, if there are to be any substances besides the unstable sensibles, they must be separate, and having no others, "set out" as separately existing these substances that have universal significance The result is that the universal substances and the particulars are just about the same entities which in itself is a difficulty of the theory.

Metaphysics 987 A 29-988 A 17, 1078 B 9-32, 1086 A 37-B 10

In connection with the influence of Socrates on this theory there is a backward reference, ὥσπερ ἐν τοῖς ἔμπροσθεν ἐλέγομεν (1086 B 2-3). If 1086 A 21 ff. is an earlier version than M, chaps 1-9 (1076 A 8-1086 A 21), the reference cannot, of course, be to 1078 B 17-31, and Jaeger consequently takes it to be 987 B 1 (*Aristoteles*, p. 195, n. 1) The passage at 1078 B 12-32, however, even if a later composition, since it is far more circumstantial than 1086 A 37-B 10, cannot have been based upon the latter. If the passage in M, chap. 9, then, does not refer to that in M, chap. 4, the natural supposition is that both are based upon the passage in A, are in fact résumés of that passage. In 1086 A 37-B 10 the doctrine of the instability of sensibles and Socrates' concern with definitions are the two factors which produce the theory of ideas; the same account is given in M, chap. 4, where, however, the name "Heraclitean" is expressly given to the doctrine of flux, and in A, chap. 6, where besides the designation "Heraclitean" the name of Cratylus is connected with this doctrine In M, chap 9, however, Socrates is expressly said to have "provoked" the theory of ideas and there is no mention of Pythagoreans, and in M, chap. 4 the Pythagoreans are mentioned only parenthetically along with Democritus to be dismissed as not invalidating the remark about Socrates; but in A, chap 6 the Pythagoreans occur frequently, and in one place it is at least insinuated that a fundamental conception in the theory of ideas was borrowed

from them. In M, chap 9, although the account of Socrates is much briefer than in M, chap. 4, special attention is given to the fact that he did not separate the universal and on this point he is praised as against the partisans of the ideas; in this respect M, chap 9 resembles M, chap 4 more closely than either resembles A, chap. 6 where the account of Socrates is reduced to a minimum. Finally in M, chaps. 9 and 4 the account passes directly from the statement of the separation of the universal as the origin of the ideas to the criticism that as a result the idea is merely a duplication of the particular (1086 B 9-11, 1078 B 31-36) This is lacking in A, chap 6, the charge of duplication beginning the criticism of the ideas in A, chap 9 (see note 118 *infra*). Now in M, chap 9 it is precisely in connection with the account of Socrates, which is much shorter here than in M, chap 4, that reference to a previous treatment is made, we should expect in that passage, then, to find a more circumstantial account of the activity and influence of Socrates, and such is found in M, chap 4 but not in A, chap 6. where even less attention is given Socrates than in M, chap. 9 itself. No one will doubt that, if the second passage in M does not refer to the first, then both have a single passage as their common source; but that passage must have had details of content found now in M, chap. 4 but lacking in A, chap. 6 If, however, to escape this difficulty one should again with Bonitz make 1086 B 2-3 refer to M, chap. 4, there would still remain to be explained the relationship of the account there with that in A, chap. 6.

The skeleton-structure of A, chap 6 in 987 A 32-B 8, however, is the same as that of M, chap. 4 in 1078 B 12-32: 1) acceptance of the Heraclitean doctrine of the instability of sensibles, 2) Socrates' universal definitions, 3) the separation of universals and the designation of them as ideas Down to this point the most striking difference is the extreme brevity of the account of Socrates in A as compared with that in M. Furthermore, A, chap. 6 introduces the account of Plato with a reference to the connection of his theory with Pythagoreanism (987 A 29-31), whereas in M, chap. 4 not only is no Pythagorean influence on the theory of ideas mentioned but any such influence on Socrates' procedure is implicitly denied. The

parenthetical reference to Democritus and the Pythagoreans in M, however, is fully motivated, its absence in the corresponding passage of A is the more suspicious because it is more obviously required In M no previous mention of the Pythagoreans has been made, and Aristotle might have said that Socrates was the first to seek universal definitions without patent inconsistency; but in A he says Σωκράτους . περὶ ὁρισμῶν ἐπιστήσαντος πρῶτου τὴν διάνοιαν (987 B 1-4) less than a score of lines after having said of the Pythagoreans περὶ τοῦ τί ἐστιν ἤρξαντο μὲν λέγειν καὶ ὁρίζεσθαι (987 A 20-21) It is true that he then criticizes the Pythagorean definitions, but that does not diminish the awkwardness of the following unqualified statement that Socrates was the first to turn his attention to definitions. The passage concerning the Pythagoreans (987 A 13-28) which causes this awkwardness presents formal difficulties of its own in the sentences which join it to the preceding and following passages. The Pythagoreans had been fully treated before (985 B 23-986 B 8), their principles had finally been admitted to be ἐν ὕλης εἴδει (986 B 6-7), and the treatment of the ancient pluralists had been formally closed (986 B 8-10) In 987 A 2-9 there is a concluding résumé of the whole previous "history"; but then we are returned to the Pythagoreans with an introductory sentence which merely repeats the close of the preceding conclusion (987 A 11-13 = 7-9). This reappearance of the Pythagoreans, though formally part of a résumé, is in fact an entirely new interpretation (cf. *Crit. Pres. Phil.*, pp. 225-226), and the curt final sentence of the chapter: παρὰ μὲν οὖν τῶν πρότερον καὶ τῶν ἄλλων τοσαῦτα ἔστι λαβεῖν (987 A 27-28), when compared with the ceremonious sentence which precedes this new treatment: ἐκ μὲν οὖν τῶν εἰρημένων καὶ παρὰ τῶν συνηδρευκότων ἤδη τῷ λόγῳ σοφῶν τοσαῦτα παρειλήφαμεν, . . (987 A 2-9), reveals itself as a makeshift and the earlier sentence as the true conclusion. Similarly the awkwardness of the transition to the account of Plato is a sign of patchwork (987 A 29-31, see note 100 *supra*); in the second sentence the γάρ makes no conceivable sense, for the Pythagoreans play no part whatsoever in the passage from here to 987 B 8 (which is parallel to the account in M) so that thus far at least there is no explanation either of the τὰ μὲν πολλὰ ἀκολουθοῦσα, however that may be interpreted, or of the ἴδια.

It would therefore seem that 987 A 9-31 was inserted by Aristotle into the midst of a previous context in which there was a direct transition from 987 A 9 to 987 A 32 and of which transition the clumsy sentence at 987 A 29-31 is the recast form [112] The purpose of the insertion is revealed by its contents; by means of a new interpretation of Pythagoreanism a connection is established between it and the doctrine of Plato, a connection which did not exist before. This, however, would require that the tenor of the earlier treatment of Plato be changed also; the influence of the doctrine of flux and of Socrates' method of definition could not be denied, but the long account of Socrates was curtailed and the parenthesis which dismissed as unimportant the previous attempts of the Pythagoreans to formulate definitions was excised, not without leaving a scar, however, in the contradiction between the remaining remarks about Socrates and the new passage on the Pythagoreans [113] The praise of Socrates to the disparagement of the Platonic "separation" was eliminated for the same reason; although the Pythagoreans in fact play no more part in stimulating the theory of ideas in A than they do in M, the

[112] This does not necessarily imply that *Metaphysics* A *as such* was not written by Aristotle for the first and last time in the form in which it now stands. The only necessary implication is that in composing it Aristotle used as a basis some earlier "history of philosophy" which he had written, inserting into this context new sections and altering particular passages without writing a completely new treatise So the theories of the chronological relationship of the various writings are involved only to the extent that *Metaphysics* A is assumed not to have been the first account of its kind written by Aristotle (see note 116 *infra*)

[113] That the passage in M (1078 B 12-32) is not a summary of A, chap 6 with 987 A 20-27 serving as the basis of the parenthesis, 1078 B 19-23, should be clear from the fact that the long account of Socrates in M cannot come from A and that even in A it is at 987 B 4 that some such remark as the parenthesis in M is expected Moreover, if the parenthesis in M was taken over directly from any passage, Democritus as well as the Pythagoreans must have figured in that passage, which is not the case in A. It is further significant that the examples of Pythagorean definition in M (1078 B 22-23) correspond more closely to the first treatment of A (985 B 29-31) than to 987 A 20 25 where the implied objection of M (*περί τινων ὀλίγων*) is not mentioned. On the other hand, the frequent similarity of expression in 987 A 32-B 8 and 1078 B 12-32 makes it necessary to assume some sort of relationship between the two passages.

comparison of the Platonic and the Socratic theories in M would only obscure the intention in A to assimilate Platonism to Pythagoreanism, for to emphasize the identity of the separate ideas with Socrates' "unseparated definitions" and to make this "separation" the chief difference between the two (1078 B 30-32, 1086 B 4-10) would emphasize the difference between Plato's ideas and the Pythagorean numbers.

With the statement that Plato "called such things ideas" the parallelism of the two passages ends. In M this leads directly to the statement of the result that there are ideas of all things spoken of universally and thence to the objection of "duplication"; but in A, instead of stressing this result of separation, Aristotle dwells on the process of participation and in this connection introduces the observation that the mechanism was borrowed from the Pythagoreans by Plato who merely changed its previous name, "imitation." This is the only place in which such a doctrine is ascribed to the Pythagoreans by Aristotle, who elsewhere contrasts them with the Platonists in this respect and implicitly contradicts the ascription in this very chapter (987 B 27-31; cf. 990 A 18-32, 1080 B 16-21, 1083 B 8-19, 1090 A 20-35, *Crit. Pres. Phil.*, p. 392); in chap. 9 (991 A 20-B 1) Aristotle uses the figures of imitation and participation indiscriminately of the Platonic mechanism. This unique treatment of participation is the first statement in the chapter which in any way supports the connection of Platonism and Pythagoreanism announced in 987 A 30, and so it falls under the suspicion of belonging not to the account which was the common origin of A, chap. 6 and M, chap. 4 but to the elements introduced under the influence of 987 A 9-31. This suspicion is strengthened by the fact that the comparison of the rôles of τὸ ἕν and τὸ ἄπειρον in the two systems (987 B 22-27) presupposes the interpretation of the Pythagorean "one" in 987 A 15-19, which contradicts that given in the earlier treatment (986 A 17-20). In the first account of the Pythagoreans, which in this agrees with the fragment from Aristotle's monograph on them (*frag.* 199; cf. Alexander, *Metaph.*, p. 40, 15-20), "the one" as even-odd is said to be a product of the unlimited and the limited, whereas in 987 A 15-19 "the one itself" is identified with the limited and opposed to the unlimited so that "the one" and

the unlimited are the ultimate principles; in 987 B 22-27 it is this pair of ultimate opposites which is assumed for both Pythagoreans and Plato. The tendency to relate Platonism and Pythagoreanism seems to be a characteristic of A, chap. 6 which is linked with 987 A 9-31 and so to have been absent from the earlier treatment of Plato. With this Pythagorean element in A, chap. 6, however, is related the treatment of numbers as the causes of all things in the Platonic system. Down to 987 B 20 Aristotle speaks of ideas without any intimation of an identification of ideas and numbers; then suddenly, in order to prove that the "elements of the ideas" were taken by Plato to be the elements of all things, he identifies with the ideas the numbers derived from the one and "the great and the small," and the sentence in which this identification is made is intelligible only as a compressed form of an argument in M (1081 A 12-17) by which Aristotle undertakes to *prove* that if the ideas are to exist at all they must be the numbers of which the one and the indefinite dyad are the principles (see note 104 *supra*). Thereafter, however, A, chap. 6 treats the ideas as identical with these numbers as if this were the only form of the theory of ideas known. Yet the criticism of A, chap. 9 gives a different impression, for it is clearly divided into two sections, the first of which takes no account of such an identification (990 A 34-991 B 9) and occurs again at 1078 B 32-1080 A 8 where the connection with the nature of the numbers has been excluded from consideration of the theory of ideas itself, while in the second section, when the discussion of the ideas as numbers does begin (991 B 9), the identification is not stated as an universally admitted principle and essential factor of the theory (cf. 991 B 9: εἴπερ εἰσὶν ἀριθμοὶ τὰ εἴδη, 991 B 19: αὐτοάνθρωπος, εἴτ' ἀριθμός τις ὢν εἴτε μή [cf. Robin, *Idées et Nombres*, pp. 359-360, n. 299, III]).

In 1078 B 9-12 the theory of ideas which Aristotle sets out to consider is, he says, the original form of the theory. Since the theory then dealt with in M, chap. 4 in no way connects the ideas with numbers and is the same as that in the first part of A, chap. 6, when half-way through this latter chapter the ideas are identified with numbers and this identification is taken for granted throughout the rest of the chapter without any

intimation that it is not identical with the theory originally devised by Plato under the influence of Heracliteanism on the one hand and of Socrates on the other, the conviction cannot be avoided that the chapter is a mechanical combination of what Aristotle *himself calls the original theory of ideas* and the identification of ideas and numbers, that the references to the Pythagoreans belong to this second element in the combination, and that this combination was not at all times considered by Aristotle to be a single, homogeneous doctrine Treated as such here it is ascribed to Plato, but one indication remains that other thinkers besides Plato were in Aristotle's mind when he wrote it It is a peculiarity of this chapter that throughout it Plato is referred to by name and in the third person singular,[114] and for this reason it has been considered especially authoritative for Plato's system as distinguished from others (cf. Burnet, *Greek Philosophy*, I, p. 314); yet after Aristotle has given the reason for the choice of the dyad as the material principle, connecting it with the derivation of the numbers, he employs the third person *plural* in referring to those who held this doctrine (988 A 2: *οἱ μὲν . . . ποιοῦσιν*).

Whatever the origin of the identification of ideas and numbers and the theory of "elements" of the ideas may have been, our three passages point to a previous account of Plato's theory in which these characteristics did not figure Even the critical passages of A and M are not concerned exclusively with Plato's own theory The first objection in A, chap. 9 (990 A 34-B 8), since the charge of "duplication". arises naturally from the account of the separation of universals, may originally have followed directly the explanation of how Plato came to "separate" the Socratic definitions as it does in M, chap 4 (1078 B 32-1079 A 4; cf the similar objection connected with the "separation" in 1086 B 10-13 and see note 118 *infra*).[115] The

[114] *ἀφεῖσαν* in 987 B 14 is no exception, for there both Plato and the Pythagoreans are referred to together (see note 103 *supra*).

[115] The use of *ὁμώνυμον* to express the relationship between ideas and particulars in a report of the theory may itself be a sign that the passage belonged to an older treatment Here one would have expected *συνώνυμον*, the word by which Aristotle represents Plato's *ὁμώνυμον* when he is not objecting that there is no more than a verbal similarity between ideas and particulars (see note 102 *supra*).

following objections, however, are in part directed against other thinkers than Plato; there is a consideration of a theory of Eudoxus who is mentioned by name (991 A 14-19 = 1079 B 18-23), and in 990 B 21-22 Aristotle speaks of *πάνθ' ὅσα τινὲς ἀκολουθήσαντες ταῖς περὶ τῶν ἰδεῶν δόξαις ἠναντιώθησαν ταῖς ἀρχαῖς*, which is certainly a reference to others than the originator of the theory and may possibly refer to attempted interpretations and developments of the doctrine within the Academy. This last remark recurs in the parallel passage in M (1079 A 17-19) even though the examination has there been restricted to the theory of ideas as originally understood. As for the section in A, chap. 9 which is not found in M and which deals with "mathematical" aspects of the theory of ideas, at least one form of doctrine there combatted was, on Aristotle's own testimony, not held by Plato at all (992 A 10-24; cf. lines 16-18 and 1087 B 12-21 [see Appendix I] and the reference to Plato [992 A 20-22] which seems to show that he is not the direct object of the attack). The list of objections, then, in A, chap. 9 and M, chaps 4 and 5 must have been compiled by Aristotle from more extensive passages in his previous writings where various forms of the theory of ideas were attacked.[116]

The division of the critique in A, chap. 9 implies a distinction between the theory of ideas as such and the identification of ideas and numbers. This distinction is expressly made in M, chap. 4, where the examination of "the theory of ideas itself,"

The critical use of *ὁμώνυμον* occurs in this chapter at 991 A 6; and it is not probable that Aristotle would have used it there in his own sense and here in Plato's, if the two passages had been originally composed at the same time. On the other hand, it is difficult to admit the explanation that *ὁμώνυμον* is here used in the critical sense, for Aristotle is reporting the Platonic theory in order to prove *not* that the ideas are essentially different from the particulars and only verbally similar but that the ideas are a duplication of the particulars, that is, as he says at 1086 B 10 11, that the separation of the universals results in making ideas and particulars the same things (cf. 1040 B 30-34). For such an argument *ὁμώνυμον* in his own sense is out of place; but, if this passage originally stood in an early account, the word might have been used in Plato's sense and would then fit the context. In that case *τῶν συνωνύμων* in 987 B 10 may be a further indication of rewriting in that passage. Aristotle himself, however, sometimes uses *ὁμώνυμον* in place of *συνώνυμον* (*Metaphysics* 1034 A 22-23, 1034 B 1, *De Generatione* 328 B 21)

[116] See Appendix II.

ὡς ὑπέλαβον ἐξ ἀρχῆς οἱ πρῶτοι τὰς ἰδέας φήσαντες εἶναι (see note 108 *supra*), consists in not connecting it with the nature of the numbers (1078 B 9-12). It is uncertain, however, whether this means that οἱ πρῶτοι *never* connected the theory with the nature of number (i e " as they understood it from the beginning ") or only that they did not do so *at first*. Moreover, μηθὲν συνάπτοντας πρὸς τὴν τῶν ἀριθμῶν φύσιν, which strictly describes the action of Aristotle rather than the attitude of those who held the theory (cf. 1076 A 23), seems to imply that it would be a misrepresentation of the original theory to connect it in any way with the problem of the nature of number. Yet Aristotle cannot mean that " the original theory " neglected this problem altogether. In the *Phaedo* which is cited in this very critique (1080 A 2 = 991 B 3) there are ideas of numbers, i. e. " ideal numbers " (e. g *Phaedo* 101 C), and in this same section which divorces the nature of the numbers from the original theory there is reference both to ideas of numbers and to " intermediate mathematical numbers " (1079 A 34-36 = 991 A 3-5). Aristotle's conception of this theory, then, could coincide with the first theory of the introduction according to which there are two kinds of non-sensible substance, ideas and mathematical numbers (1076 A 19-20); and this, inasmuch as it is supposed to have both separate mathematical numbers and a class of non-mathematical numbers *among* the ideas, would fall within the scope of the third topic even after the ideas *simpliciter* have been eliminated. Consequently what Aristotle excludes as foreign to the original theory is not all consideration of number or a doctrine of ideas of number but any and every notion according to which the nature of the ideas *as such* is numerical, whether this numerical nature be mathematical as in the second theory of the introduction (1076 A 20-21, cf 1080 B 22-23) or non-mathematical in the sense of the ideal number of the original theory. This latter conception would fit the first theory of the introduction so interpreted as to identify the ideas with the ideal number which the original theory had treated as one class among the ideas, and this identification is made in the discussion of the third topic where it is connected with the notion of the one and the indefinite dyad as principles (1081 A 12-17). This conception, then, whatever its origin and motivation, is cer-

tainly foreign to the theory of ideas as understood by Plato ἐξ ἀρχῆς and is not essential to what Aristotle calls a consideration of the ideas themselves. In that case, however, the apparent unity of the account in A, chap. 6 is an unhistorical fiction; the connection of the ideas and numbers there has nothing to do with the theory of ideas as such, and the influence on the theory there imputed to the Pythagoreans, inseparable from this connection as it is, is shown by Aristotle himself to be at best a reconstruction based upon a later conception of the nature of the ideas

It is not only in *Metaphysics* M, however, that the ideas are treated in the way in which Aristotle here says that they were originally understood It might be thought that in this book the formal arrangement of the argument is a special reason for distinguishing the ideas as such from the ideas as numbers but that this so-called "original theory" is not that with which Aristotle generally reckons as *the* theory of ideas On the contrary, he frequently criticizes the theory elsewhere without considering the possibility that the ideas may be numbers in any sense and much of what he says is even incompatible with such an interpretation. It is his account and criticism of the theory of ideas proper, then, with which we must first concern ourselves, for both historically and systematically this is the fundamental form of the theory for Aristotle himself and what he says concerning the connection of ideas and numbers can be understood and evaluated only with reference to it.

In *Metaphysics* A, chap 9 and M, chap. 4 the list of objections to the ideas is headed by the charge that those who posit the ideas in attempting to ascertain the causes of phenomena have merely duplicated the objects to be explained, as if one were to increase the number of things to be counted with the notion that the counting would thereby be facilitated. The ideas are at least equal in number to the things the search for the causes of which impelled these thinkers to proceed to the ideas, for answering to each thing there exists something of the same name and apart from the substances, and of other things (i. e. other than substance) there exists a one-over-many, both in the case of the objects of the phenomenal world and in

Metaphysics 990 A 34 B 8, 1078 B 32-1079 A 4

the case of the eternal objects.[117] As this objection is stated in M, it is made a direct result of the Platonic "separation" of the Socratic universals or definitions, which separation, Aristotle says, necessitated assuming ideas for *all* τὰ καθόλου λεγόμενα. We have Plato's own words to support this assertion that an idea was assumed corresponding to every universal concept (*Republic* 596 A; for Aristotle's *terminus technicus* καθόλου in this connection cf. *Meno* 77 A. κατὰ ὅλου εἰπὼν ἀρετῆς πέρι ὅτι ἐστίν and *Republic* 392 D-E οὐ κατὰ ὅλον). The consequence of thus setting up as an idea every ἓν ἐπὶ πολλῶν would be the assumption of a separate idea not only for every common class of sensible substances but for every common predicate of those substances and for every term applicable in common to any of these ideas as well. This enables Aristotle to complain that the attempt to explain by the theory of ideas one multiplicity results only in positing another at least equally extensive.[118]

[117] I have adopted Ross' text for 990 B 6-8 καθ' ἕκαστον γὰρ ὁμώνυμόν τι ἔστι καὶ παρὰ τὰς οὐσίας, τῶν τε ἄλλων ἔστιν ἓν ἐπὶ πολλῶν, καὶ ἐπὶ τοῖσδε καὶ ἐπὶ τοῖς ἀιδίοις 1079 A 2-4 καθ' ἕκαστόν τε γὰρ ὁμώνυμον ἔστι καὶ παρὰ τὰς οὐσίας, τῶν τε ἄλλων ἓν ἔστιν ἐπὶ πολλῶν κτλ. Cf Ross, *Metaphysics*, I, p 191 and Robin, *Idées et Nombres*, n 150 (pp 123-125) who, however, reads Bekker's text.

The phrase ἐπὶ τοῖς ἀιδίοις, however, in spite of 991 A 10 (τοῖς ἀϊδίοις τῶν αἰσθητῶν) refers not to the heavenly bodies (Ross, *ad loc.*; Bonitz, *Metaphysica*, p. 109) but to the ideas Aristotle frequently asserts that the ideas differ from the sensibles only in being eternal (*Metaphysics* 1060 A 16-18. τό γε μὴν ἴσας ταῖς αἰσθηταῖς καὶ φθαρταῖς οὐσίαις ἀιδίους ἑτέρας κατασκευάζειν . . , 997 B 6-12, 1040 B 30-34, 1028 B 19-20, *Eth Nic* 1096 B 2-5) and in the present chapter he indicates his belief that eternality is the special characteristic which distinguishes the ideas (990 B 31-34, 991 A 23-27, and cf 991 A 3-5 with 987 B 14-18) So Plato applies the epithet ἀΐδιον to the παράδειγμα (*Timaeus* 29 A, 37 D, cf *Timaeus* 37 E, *Symposium* 210 E ff, *Philebus* 15 A-B). By τάδε καὶ τὰ ἀΐδια, then, are meant the sensibles and the ideas in which they participate (cf Alexander, *Metaph*, p 91, 2-4), Aristotle points out that the relationship of ἓν ἐπὶ πολλῶν exists among the ideas as well as in the case of phenomena, so that, besides the ideas of sensible substances and of the qualities etc exhibited by those substances, there must be other ideas which are the "genera" of those ideas (cf 991 A 29-31) On ὁμώνυμον see note 115 *supra*

[118] The comparison is between the number of ideas and the number of individual things, *not* classes of individual things (cf Robin, *Idées et Nombres*, n. 150, pp. 121-123) In 1078 B 36 the ideas are said to be "more" than the individual sensibles, in 990 B 4-5 "about equal or not fewer" (σχέδον γὰρ ἴσα

Aristotle's complaint, however, is not merely that the ideas are at least as numerous as the things which their existence is supposed to explain; they are, furthermore, essentially the same as the particular sensibles. Those who posited the ideas did so in the belief that, if there were to be any substances beside the sensibles which are

Metaphysics 1086 B 7-13

ἢ οὐκ ἐλάττω) The statement in M has been called an "exaggeration" of that in A, and the 'more moderate" expression of A has been taken as a further sign that at the time this was composed Aristotle was still a Platonist (Ross, *Metaphysics*, I, pp xxii and 190) Neither the ἴσα of A nor the πλείω of M can be taken quite strictly, since there could be no way of calculating the relative number of ideas and individual sensibles Aristotle himself in *Metaphysics* Λ, having demonstrated the existence of eternal, immobile, and separate substance *and undertaking to decide whether this is one or multiple, says that no one* else has ever said anything about the number of such substance that can even be clearly stated ἡ μὲν γὰρ περὶ τὰς ἰδέας ὑπόληψις οὐδεμίαν ἔχει σκέψιν ἰδίαν (1073 A 14 18) Even the conflicting statements which might be interpreted as implying an answer to the question involve the identification of ideas and numbers In 1060 A 16 18 it is called unreasonable ἴσας ταῖς αἰσθηταῖς καὶ φθαρταῖς οὐσίαις ἀϊδίους ἑτέρας κατασκευάζειν, clearly a reference to the Platonic ideas (cf 997 B 5 12), but the parallel with the "more moderate" expression of A cannot be a sign of 'tolerance" toward the theory of ideas in K (cf 1059 B 3) *Metaphysics* 1028 B 19 21 would, on Ross' interpretation, furnish from Z a parallel expression to that of M, but οἱ δὲ πλείω καὶ μᾶλλον ὄντα ἀΐδια does not mean "some think there are eternal entities more numerous and more real than the sensibles" The preceding clause (ἔτι παρὰ τὰ αἰσθητὰ οἱ μὲν οὐκ οἴονται εἶναι οὐθὲν τοιοῦτον) and the following (ὥσπερ Πλάτων τά τε εἴδη καὶ τὰ μαθηματικὰ δύο οὐσίας, τρίτην δὲ τὴν τῶν αἰσθητῶν σωμάτων οὐσίαν) show that πλείω means "more than one," i e the *two classes* beside the sensibles "Others think that there are several (such substances beside the sensible) and, as they are eternal, substances to a higher degree (than the sensibles), as Plato holds the ideas and mathematicals to be *two* substances and *the substance of sensible bodies to be a third* ' (For μᾶλλον = μᾶλλον οὐσίαι cf 1028 B 17)

The difference between the πλείω of M and the ἴσα ἢ οὐκ ἐλάττω of A, however, does imply a different interpretation of the simile, ὥσπερ εἴ τις . . . πλείω δὲ ποιήσας ἀριθμοίη, which occurs in both books A and M If the ideas are only equal in number to the sensibles, the increased number must be ideas *plus* sensibles, whereas in M the justification of the simile by the contention that there are *more* ideas than sensibles implies that the greater number substituted for the lesser is the number of ideas *alone* This latter is the more appropriate to Aristotle's account of the ideas, according to which they are *substituted* for the sensibles as being the οὐσίαι of them and the only objects of knowledge (cf. 992 A 26-27. τὴν δ' οὐσίαν οἰόμενοι λέγειν αὐτῶν ἑτέρας μὲν οὐσίας εἶναι φαμεν, 991

in constant flux, these must have separate existence, but the only other substances that they could find were those which are predicated universally, and these they therefore set out as existing separately, with the result that the universal and the particular substances have practically the same nature[119] This in itself, Aristotle says, would be a difficulty in the theory

How he conceives this essential identity of ideas and phenomena is unambiguously stated in the problems of *Metaphysics* B The natural entities assumed by the theory to exist apart from those in the phenomenal world (997 B 6-7. παρὰ τὰς ἐν τῷ οὐρανῷ, cf. *De Caelo* 278 B 18-24, *Physics* 203 A 8-9, *Metaphysics* 990 A 18-22, 1080 B 16-20) differ from the sensibles only in that the latter are perishable while they are eternal That this is so, Aristotle says, is proved by the fact that the Platonists assert the existence of *αὐτὸ ἄνθρωπος, αὐτὸ ἵππος, αὐτὸ ὑγίεια without making any further qualification*; consequently what they call ideas are simply eternal sensibles, just as the anthropomorphic gods which some people believe to exist amount to nothing more than eternal human beings Similarly in *Metaphysics* 1040 B 30-1041 A 3 the word *αὐτό* is said to have been added to the names of the sensibles to produce designations such as *αὐτοάνθρωπος* because the Platonists could not explain what the imperishable sub-

***Metaphysics* 997 B 5-12**

A 12-14 = 1079 B 15-18, 987 B 4 10, 1078 B 15-17, and n b 990 B 5-6: *ἐκ τούτων ἐπ' ἐκεῖνα προῆλθον* = 1079 A 2· *ἐκ τούτων ἐκεῖ προῆλθον*) In M this *substitution* is given as the concomitant of the "separation" of the universals whereas in A the primary motive for positing the ideas is replaced by the vaguer statement, *ζητοῦντες τωνδὲ τῶν ὄντων λαβεῖν τὰς αἰτίας ἕτερα τούτοις ἴσα τὸν ἀριθμὸν ἐκόμισαν*, which is used as an introduction to a criticism that should follow logically the description of the "separation" In M the simile is motivated by the *πάντων τῶν καθόλου λεγομένων* and the interpretation of *πλείω* is in keeping with the substitution of separate ideas for immanent universals, in A the simile is kept, but the absence of the motivation results in a different, and a less appropriate, interpretation It seems probable, therefore, that M here represents more faithfully than A the original from which both of them were derived (see also note 115 *supra*).

[119] They should therefore be identical in substance It is this separation of the universal, which ought to be recognized as *substantially* the same as the sensible particulars, that leads to the incompatible characteristics of the Platonic idea (1086 A 35-37, see note 111 *supra*)

stances apart from the particular sensibles were and so made them the same in kind as the perishables.[120]

The same conception of the idea recurs in the criticism of the idea of good, where Aristotle generalizes his criticism by asking what the Platonists can possibly mean by the terms which they form through the addition of αὐτό to each several thing. There is one and the same formula in their αὐτοάνθρωπος and in ἄνθρωπος, namely the formula of man, for *qua man* the idea of man and man do not differ.

Eth. Nic. 1096 A 34-B 5

[120] In *Metaphysics* 1059 A 10-14 the attempt to disprove the existence of Platonic ideas by showing that the idea and the particular cannot be τῷ εἴδει ταὐτά turns upon the argument that τὸ φθαρτόν and τὸ ἄφθαρτον are γένει ἕτερα and so *a fortiori* εἴδει ἕτερα [This argument requires γένος and εἶδος to have the technical meaning», genus and species; but the proof that φθαρτόν and ἄφθαρτον are γένει ἕτερα, 1058 B 26-29, seems to prove rather that they are different in *species*. Ross, therefore, takes γένος and εἶδος to mean "kind" and "form" in 1058 B 26-1059 A 10 and supposes that this part of the chapter was written before Aristotle had begun to use the words in their technical sense whereas 1059 A 10-14 was "added later under the supposition that generic as opposed to specific difference between the perishable and the imperishable had been proved" (Ross, *Metaphysics*, II, p 305). It is difficult to see, however, why the chapter was written at all except for the polemic of 1059 A 10-14, and the fact that in the *Topics* the imperishability of the ideas is made the foundation of a *topos* to be used against Platonic definitions of "perishables" (*Topics* 148 A 14-22) makes it improbable to suppose that 1059 A 10-14 is an "afterthought" Moreover, the technical distinction of γένος and εἶδος runs through all of Book I (cf chaps. 3, 4, 7, 8, 9), so that Ross would have to suppose that 1058 B 26 1059 A 10 is earlier than not merely 1059 A 10-14 but practically the whole book in which it stands We must admit the integrity of chap. 10, therefore; and, if we are not to suppose that the whole argument rests upon an equivocation, we must suppose Aristotle to have thought that the contrariety in question is clearly inherent in the generic matter (cf 1054 B 27-30), since what is perishable is not merely *actually* not eternal but has not even the generic *potency* of being so (cf. the interpretation of St. Thomas quoted by J Tricot, *Aristote, Metaphysique*, II, p 95, n 2)] For Aristotle's conception of the nature of the ideas the significant fact is that it is the *imperishability* of the idea which is chosen to refute the specific identity of the idea of man and the particular man In the various topics suggested as useful against those who posit the ideas we have seen that Aristotle takes it for granted that there is no characteristic to distinguish the idea from the immanent universal except the marks of its transcendence as an unique individual, i e eternity, immobility, impassivity (see pages 1-10 *supra*). Cf also *Metaphysics* 1060 A 16-18 where in the rejected suggestion of separate substances equal in number to the sensibles the differentiation of the two classes consists only in the distinction φθαρταί—ἀΐδιοι.

Consequently *qua* good there is no difference between the " idea of good " and " good." Nor will the αὐτοαγαθόν be good to a higher degree by reason of being eternal, since what is white for a long time is not for that reason more white than the white that lasts a single day. The idea, then, is just the formula of the essential nature; all that the Platonists do, according to this account, is to take this formula which is common to a class or group of particulars and, because it is eternal while the particulars are not, to separate it from them as a self-subsistent entity (cf. *Eth. Eud.* 1218 A 10-14). Yet differences of duration are not different degrees of reality, so that even the " eternity " of the essential nature is no reason for making it an individual entity existing separately from the particulars of which it is the essential nature. In making this common formula a separate entity, the Platonists in fact admit that it is for them just another individual essentially identical with all the individuals of the class which it is supposed to explain, for its " eternity " differentiates it from them no more than their various *durations* as things of such a kind differentiate them from one another.[121]

Physics 193 B 35-194 A 7

That Aristotle considers the Platonic ideas to have all the characteristics of their sensible replicas is further substantiated by his charge that in positing the ideas the Platonists separate what cannot even in thought be abstracted from physical matter. The mathe-

[121] In *Eth. Nic.* 1096 B 1 ἀνθρώπῳ is not the individual but the species (Robin, *Idées et Nombres*, n 61[2] [p 58]), as the parallel passage in *Eth. Eud.* 1218 A 11 shows. It is ὁ λόγος ὁ κοινός to which the Platonists add the characteristic αὐτό. This common formula, however, according to Aristotle does not exist apart from the individuals (*Metaphysics* 1038 B 34-1039 A 2, 1040 B 25-27; *Anal. Post.* 77 A 5-9, 85 B 15-22 [cf. 85 A 31], *Soph. Elench.* 178 B 37-179 A 10, *De Gen. Animal* 731 B 34, 767 B 29-35), the eternity of the natural species being the result of the procreation of the individuals (*De Gen. Animal* 731 B 31-35, *De Anima* 415 B 3-7 [cf. Plato, *Symposium* 206 C, E, 207 D, *Laws* 721 C]). Indeed the separation and individualization of the idea prevent it from fulfilling the function of the common predicate, since this latter must be *immanent* (*Metaphysics* 1040 B 25-27), from this point of view, the idea differs from the common formula just because it is separated from the individuals. This point is expressly made in *Eth. Eud.* 1218 A 14-15 ὥστε οὐδὲ δὴ τὸ κοινὸν ἀγαθὸν ταὐτὸ τῇ ἰδέᾳ· πᾶσι γὰρ ὑπάρχει ⟨τὸ⟩ κοινόν (cf. *Magna Moralia* 1182 B 12-16); the idea, which is essentially identical with the common predicate, by being " separated " loses its common character and becomes just an " eternal sensible."

matician studies the forms and attributes of physical bodies but not in so far as they inhere in physical bodies, for these objects are separable in thought from change (for κίνησις as the characteristic mark of ὕλη φυσική cf *Metaphysics* 1025 B 26-28, 1026 A 2-3, 10-16, 1069 A 36-B 1) even though they have no existence apart from sensible matter (*Metaphysics* 1077 B 12-1078 A 31). The Platonists, Aristotle then says, unwittingly apply the same method of abstraction to physical objects, "separating" them although they are less separable than mathematical objects. Mathematical objects and their attributes (e. g. *number, line, figure, and even, odd, straight, curved*) can be defined without reference to change; not so flesh, bone, man, and their attributes, for these are like "snub nose" rather than "the curved," that is they involve physical matter in their definitions (cf. *Metaphysics* 1025 B 30-1026 A 6, 1037 A 32-33). In saying that those who posit ideas do just what the mathematician does in abstracting the objects of his investigations Aristotle does not mean that the Platonists considered the ideas to be separate in thought only. They were unaware both of the nature of the method of abstraction which they were employing and of the limitation of its applicability (λανθάνουσι means "unwittingly," not "surreptitiously" [cf *Metaphysics* 993 A 1-2]). They held that the ideas which they mistakenly "abstracted" had a separate existence apart from phenomenal individuals (cf. *Physics* 203 A 8-9, 209 B 34), and Aristotle refutes them with an *a fortiori* argument since the natural objects which they separate are not separable even in thought, they are certainly not substantially separate and therefore cannot be ideas (cf. Themistius, *Phys.*, p. 41, 14-15, Philoponus, *Phys.*, p. 224, 5-11). The immediate interest of the passage lies in the fact that it takes the ideas of such physical phenomena as flesh, bone, man to be essentially identical with the sensible individuals and expressly different from mathematical entities. Had Aristotle thought of the ideas of these objects as numbers in any sense, he could not have argued that they are inseparable *even in thought.*

It is well to emphasize that the express description of the ideas as identical duplicates of the particulars, from which they differ only in being immaterial or indestructible, occurs as no

isolated interpretation which might be explained as an aberration from Aristotle's normal conception of their nature. The unambiguous statements of this conception which have been discussed above come from *Physics* B and *Eth. Nic.* A and from Books Z and I as well as B and M (chap. 9) of the *Metaphysics.* These, furthermore, are only the most explicit and unmistakable statements of this interpretation, the entire body of criticism which will be considered in this chapter implies the same conception. These passages in themselves, however, are enough to show that, while Stenzel touched upon a significant truth in asserting that much of Aristotle's criticism of χωρισμός and μέθεξις has to do with "the technically logical problem of diaeresis" (i. e. with the relation of genera and species), he committed a compensatory error in the other direction by maintaining that this criticism is "garnicht (gemeint) in der verwaschenen Allgemeinheit zweier sogenannten 'Weltanschauungen'—hie Idealismus, hie Realismus" (*Zahl und Gestalt,* p 135) A large part of Aristotle's criticism of the theory of ideas does turn upon the relationship of what he calls γένη and εἴδη; but just as large a part is concerned with the Platonic separation of the εἶδος from the sensible individuals, and it is this latter element of Platonic procedure which Aristotle in his own words designates as the fundamental source of all the difficulties in the theory (*Metaphysics* 1086 B 6-7 where χωρίζειν means the separation of universals as οὐσίαι παρὰ τὰς αἰσθητάς, cf. lines 7-11).[122]

[122] Stenzel's thesis is set forth in *Zahl und Gestalt,* pp 133 ff. In connection with his interpretation of *Metaphysics* Z, chap 12 and H, chap 6 The thesis is mentioned with approval by A E Taylor, *Plato, The Man and His Work,* p 515, and by G R G Mure, *Aristotle,* p 187, n. 1 In *Metaphysics* Z (1040 B 26-34), however, at the conclusion of a section (Z, chaps. 13-16, cf. Ross, *Metaphysics,* II, p 209) in which the difficulties raised by the relations of genus and species are used to attack the ideas (cf chap 14), it is the separation of the specific form from the sensible individuals with which it is essentially identical (ἄνθρωπος, ἵππος), *not* that of the genus from the species, that Aristotle gives as the fundamental error of the Platonic theory Chap 14 itself concludes with a reference to the separation of the specific form from the sensible individuals as an *a fortiori* argument against the ideas (1039 B 16-19), and in chap 15, where the idea is said to be indefinable because it is considered by the Platonists to be a separate individual (1040 A 8-9, cf. Ross, *Metaphysics,* II, p. 215 on 1040 A

The passages already treated are sufficient to prove that Aristotle thought that the Platonic ideas were meant to have a real existence separate from all phenomena; he never deviates from his representation of them in this respect, and a complete list of the passages which present this interpretation explicitly or implicitly would include almost every reference to the ideas in his writings.[128] If Aristotle were demonstrably mistaken in this

14-15), it is the separate existence of the ἄτομον εἶδος, man, which is taken to be the fundamental mistake from which follow the impossible consequences of the separate existence of differentia as well as genus (1040 A 18-19) It is worthy of notice that Stenzel does not in his book mention the existence of any of the passages which have been discussed above. (Cf against Stenzel on this point W F R Hardie, *A Study in Plato*, pp 74-76)

[128] Ross (*Metaphysics*, I, p. xlii) maintains that, since Aristotle says that the Platonists treated the universal as having a separate existence and at the same time refers frequently to the doctrine of participation of the particulars in the ideas, his view must have been that for them the universal existed apart from the particulars *as well as* in them, i e. that the ideas were *both* transcendent *and* immanent This, however, tends to confuse with what Aristotle holds to be the theory of the Platonists the dilemma in which he seeks to involve them. The Platonists thought that μέθεξις of the ideas explained the existence of particulars This, Aristotle contends, has no meaning, because it does not explain how the ideas which are other substances than the phenomena can still be the substances of these phenomena (*Metaphysics* 992 A 26-29) His argument that the ideas can contribute neither to the existence nor to the knowledge of the things which participate in them rests upon the contention that to do so they would have to inhere in the latter (*Metaphysics* 991 A 12-14 = 1079 B 15-18); and he attacks "paradeigmatism" and "participation" as identical and equally futile metaphors just after having mentioned as different from the Platonic theory that of Eudoxus which *did* make the ideas somehow immanent (*Metaphysics* 991 A 14-22 = 1079 B 18 26). It is Aristotle's contention that as effective causes of existence or knowledge the ideas would have to be immanent in particulars but that this they *cannot* be without losing the essential character of Platonic ideas (see the topics discussed in pages 1-8 *supra* and note 121 *supra* for the distinction of the idea from the common predicate; for Aristotle's method of attack see pages 81-82 *supra*) Had μέθεξις implied "immanence" to Aristotle he would hardly have disavowed knowledge of what Plato meant by it, as he expressly does (cf. *Metaphysics* 987 B 13-14 and Bonitz, *Metaphysica*, p. 91). That he would have attacked the theory in a quite different fashion had he understood it to posit ideas at once transcendent and immanent can be seen from *Metaphysics* 998 A 7-19 where he argues against a doctrine according to which the mathematical μεταξύ exist but exist as immanent in the sensibles. Even on that theory, moreover, it is clear from his argument that he understands the ideas not to exist in this fashion but completely χωρὶς τῶν αἰσθητῶν.

interpretation, not only would his entire criticism of the Platonic theory collapse, but no trust could be accorded to any of his reports of Plato's doctrine. Now there have not lacked modern scholars to assert with vigor that this fundamental point of Plato's theory *has* been misrepresented by Aristotle and to draw the necessary conclusion that, since he failed to understand Plato here, he has mistaken him in all essential matters.[126] Inasmuch as Aristotle certainly has misinterpreted Plato elsewhere, it is not *prima facie* impossible that he should have been thoroughly wrong about the fundamental conception of the

[126] P Natorp, author of the chief exposition of the Neo-Kantian interpretation of Plato (*Platos Ideenlehre*, Leipzig, 1903, 2nd edition, 1921), has most emphatically attacked Aristotle on this ground, for the fundamental thesis of Natorp's work is that "die Ideen Gesetze, nicht Dinge bedeuten," and it is his contention that the contrary interpretation is due to the fact that "die herrschende Darstellung der Platonischen Grundlehre besonders durch die Auffassung und das Urteil des Aristoteles stark und, wie ich glaube, verhangnisvoll beeinflusst ist" Natorp's interpretation is represented in English by J A Stewart's work, *Plato's Doctrine of Ideas*, in which Aristotle's interpretation of the "separation" is similarly attacked (on this book cf Festugière, *Contemplation et Vie Contemplative selon Platon*, p. 103, n. 4) Against Natorp's thesis and the Neo-Kantian interpretation generally cf. H Gomperz, "Platons Ideenlehre" (*Archiv für Geschichte der Philosophie*, XVIII [1905], pp 441 495); Kristian B-R. Aars, "Platons Ideen als Einheiten" (*Archiv fur Geschichte der Philosophie*, XXIII [1910], pp 518-531); A Diès, *Autour de Platon*, pp 352-362; Leisegang, *Die Platondeutung der Gegenwart*, pp 73-90.

Constantin Ritter, who interprets the Platonic idea as "was an einem Ding, sei es ein sinnliches sei es ein unsinnliches, richtig aufgefasst wird," as "das vorstellbare Ding in seinem Grundbestand" (*Die Kerngedanken der Platonischen Philosophie*, p. 150; cf. *ibid.*, pp 77, 82-91), as "eine objektive Grundlage, ein in der Natur gegebenen festen Halt für das was wir uns in der Form abstrakter Allgemeinheit denkend vorstellen," so far agrees with Natorp as to consider the "separation" which Aristotle ascribes to the ideas simply "fantastic"; the interpretation of the ideas as χωριστά and all the criticisms which imply this interpretation are rejected as sheer misconceptions of Plato's meaning (*Neue Untersuchungen über Platon*, pp 318-319; *Die Kerngedanken*, pp. 231 f). Yet even Ritter is forced to admit that certain passages of the dialogues, taken at their face value, do assert the transcendence of the ideas (*Neue Untersuchungen*, p 280); and he like Natorp can only argue that these passages must not mean what they most clearly say Against this contention of Ritter's and the tendency to deny the separate existence of the ideas in general cf Shorey, *Class. Phil*, V (1910), pp. 391-393, *Unity*, pp 27-30, *Plato, Republic* (Loeb Class Lib), II, pp ix-xxi.

ideas; certainly there is no validity in the argument that, having been a student of Plato for twenty years, he *could* not have misunderstood him, for we have indications that on other questions the immediate pupils of Plato disagreed about the nature and the import of his opinions (see pages 87-88 *supra*), so that we are estopped from arguing that the interpretation of an immediate pupil must for that reason alone be correct. In the matter of "separation," however, *all* the evidence supports Aristotle. In the first place, Aristotle himself ascribes such a class of separately existing, non-sensible entities not only to Plato but also to Speusippus and Xenocrates. The mathematicals of the former and the idea-numbers of the latter are said to be χωριστά in the same sense as Plato's ideas (1080 B 14-16, 1086 A 2-5, 1090 A 35-B 1 [Speusippus; cf. Lang, *Speusippus, frag.* 30 and pp. 28-30; Zeller, *Phil. Griech.*, II, 1, p. 1003, n 1]; 1069 A 33-36, 1076 A 19-22 [Plato, Xenocrates, Speusippus, all posit an οὐσία χωριστή]; 1083 B 1-8, 1086 A 5-11 [Xenocrates, cf Sextus, *Adv. Math.*, VII, 147-149 = Xenocrates, *frag.* 5]); even if Aristotle had mistaken the Platonic "separation," it is highly improbable that he could have falsely imputed the same notion to these two contemporaries without contradiction or argument. It seems rather that this was one doctrine on which, in spite of other differences, Xenocrates, Speusippus, and Plato were agreed: there must be a class of entities separate from the sensibles to serve as the objects of knowledge (cf. Speusippus, *frags.* 43 [*Metaphysics* 1090 A 35-B 1], 30, 4 [p. 54, 13-17, Lang; see note 169 *infra*]; Xenocrates, *frag.* 5). In the second place, Aristotle's interpretation is here supported directly by Xenocrates who defined the Platonic idea as an αἰτία παραδειγματικὴ τῶν κατὰ φύσιν ἀεὶ συνεστώτων, asserting that it was χωριστὴ καὶ θεία (Xenocrates, *frag.* 30 [Proclus, *In Parm.*, V, p. 136, Cousin = p. 691, Stallbaum]; see note 167 *infra*). Those who have rejected Aristotle's interpretation of the χωρισμός have attributed that interpretation to his inveterate tendency to take literally the myths and metaphors of Plato (cf. Natorp, *Platos Ideenlehre* [1921], p. 75). That Aristotle displays this tendency no one can deny; but it is the more significant that Xenocrates, who in opposition to Aristotle's literal

interpretation of the creation myth in the *Timaeus* insisted that Plato's form of expression there was διδασκαλίας χάριν (Xenocrates, *frag* 54, cf. Lang, *Speusippus*, pp. 30-32) and so showed himself able and willing to reply to Aristotle's criticism by distinguishing between metaphor and philosophical intention, agreed with him in taking the separate existence of the ideas quite literally. Finally, there is the testimony of Plato's own writings Here, to be sure, those who refuse to believe that Plato could have meant the ideas to have transcendent reality try to explain away his words as merely an "emphatic and picturesque way of distinguishing the universal from the particulars"; but even if we leave out of account the many passages where, no metaphysical problem being directly involved, the ideas are treated in a way susceptible of a simply logical interpretation and those in which the mythical language might lend some support to the plea of confession and avoidance which these interpreters enter, there remain statements of the transcendence of the ideas that no impartial judge could overlook or sophisticate away. It would have been impossible for the question to be put more concisely and unambiguously than it is in the *Timaeus*· ἆρα ἔστιν τι πῦρ αὐτὸ ἐφ' ἑαυτοῦ καὶ πάντα περὶ ὧν ἀεὶ λέγομεν οὕτως αὐτὰ καθ' αὑτὰ ὄντα ἕκαστα, ἃ ταῦτα ἅπερ καὶ βλέπομεν ὅσα τε ἄλλα διὰ τοῦ σώματος αἰσθανόμεθα, μόνα ἐστὶν τοιαύτην ἔχοντα ἀλήθειαν, ἄλλα δὲ οὐκ ἔστι παρὰ ταῦτα οὐδαμῇ οὐδαμῶς, ἀλλὰ μάτην ἑκάστοτε εἶναί τί φαμεν εἶδος ἑκάστου νοητόν, τὸ δ' οὐδὲν ἄρ' ἦν πλὴν λόγος; (51 B-C). The answer is equally explicit: εἰ μὲν νοῦς καὶ δόξα ἀληθὴς ἑστον δύο γένη, παντάπασιν εἶναι καθ' αὑτὰ ταῦτα, ἀναίσθητα ὑφ' ἡμῶν εἴδη, νοούμενα μόνον . . . δύο δὴ λεκτέον ἐκείνω . . . (51 D-E). The passage which follows lays the greatest possible stress upon the "separation" of the ideas from the phenomena and the χώρα which is the necessary seat of all phenomenal existence ὁμολογητέον ἓν μὲν εἶναι τὸ κατὰ ταὐτὰ εἶδος ἔχον, ἀγέννητον καὶ ἀνώλεθρον, οὔτε εἰς ἑαυτὸ εἰσδεχόμενον ἄλλο ἄλλοθεν οὔτε αὐτὸ εἰς ἄλλο ποι ἰόν, ἀόρατον δὲ καὶ ἄλλως ἀναίσθητον, ταῦτο ὃ δὴ νόησις εἴληχεν ἐπισκοπεῖν. . . εἰκόνι μὲν . . . ἐν ἑτέρῳ προσήκει τινὶ γίγνεσθαι, οὐσίας ἀμωσγέπως ἀντεχομένην, ἢ μηδὲν τὸ παράπαν αὐτὴν εἶναι, τῷ δὲ ὄντως ὄντι βοηθὸς ὁ δι' ἀκριβείας ἀληθὴς λόγος, ὡς ἕως ἂν τὸ μὲν ἄλλο ᾖ, τὸ δὲ ἄλλο, οὐδέτερον ἐν οὐδετέρῳ ποτὲ γενόμενον ἓν ἅμα ταὐτὸν καὶ δύο γενήσεσθον (52 A-C, cf. Shorey,

A. J. P., X [1889], p. 68). Whoever refuses to believe this earnest and explicit statement of the separate existence of the ideas will not be persuaded by the accumulation of further passages to the same effect; [125] he is bound, however, to reject

[126] Among the other passages in which the separate existence of the ideas is explicit I cite the following as examples which cannot be explained away as merely "metaphorical" or "picturesque" expressions of the distinction of universal and particulars *Phaedo* 103 B *τότε μὲν γὰρ ἐλέγετο ἐκ τοῦ ἐναντίου πράγματος τὸ ἐναντίον πρᾶγμα γίγνεσθαι, νῦν δέ, ὅτι αὐτὸ τὸ ἐναντίον ἑαυτῷ ἐναντίον οὐκ ἄν ποτε γένοιτο, οὔτε τὸ ἐν ἡμῖν οὔτε τὸ ἐν τῇ φύσει* (cf *Parmenides* 132 D [*τὰ μὲν εἴδη ταῦτα ὥσπερ παραδείγματα ἑστάναι ἐν τῇ φύσει, τὰ δὲ ἄλλα τούτοις ἐοικέναι καὶ εἶναι ὁμοιώματα*], *Republic* 501 B [*πρός τε τὸ φύσει δίκαιον καὶ καλὸν καὶ σῶφρον καὶ πάντα τὰ τοιαῦτα, καὶ πρὸς ἐκεῖν' αὖ τὸ ἐν τοῖς ἀνθρώποις ἐμποιοῖεν*]), *Parmenides* 133 C· *οἶμαι ἄν καὶ σὲ καὶ ἄλλον, ὅστις αὐτήν τινα καθ' αὑτὴν ἑκάστου οὐσίαν τίθεται εἶναι, ὁμολογῆσαι ἂν πρῶτον μὲν μηδεμίαν αὐτῶν εἶναι ἐν ἡμῖν* (n b — *παρ' ἡμῖν*, 133 D) *πῶς γὰρ ἂν αὐτὴ καθ' αὑτὴν ἔτι εἴη; καλῶς λέγεις* Now it is just this transcendence of the ideas which is in *Parmenides* 134 E-135 A stressed as the fundamental difficulty of the theory (cf 133 C-134 E); yet it is these transcendent ideas which Parmenides says cannot, for all their difficulties, be abandoned (135 B). Any attempt to take the *εἴδη τῶν ὄντων* of 135 B, which Parmenides says must be assumed, as other than the transcendent ideas of 135 A (cf, for example, G F Else, "The Terminology of the Ideas," *Harvard Studies in Class. Phil.*, XLVII [1936], pp 30, 34-35, 55) not only ruins the logical connection of the passage and requires that Plato use the same word in two different meanings without any indication of the distinction which would be fundamental for this dialogue and for his whole philosophy,—it is refuted beforehand by the fact that the *εἴδη τῶν ὄντων* of 135 B are described in the same terms as the transcendent ideas of 135 A (cf. *εἴ γέ τις . . . αὖ μὴ ἐάσει εἴδη τῶν ὄντων εἶναι . . μηδέ τι ὁριεῖται εἶδος ἑνὸς ἑκάστου* [135 B] with *εἰ εἰσὶν αὐταὶ αἱ ἰδέαι τῶν ὄντων καὶ ὁριεῖταί τις αὐτό τι ἕκαστον εἶδος* [135 A]) That Plato is here reaffirming the necessity of positing transcendent ideas in spite of the difficulties which make it possible for only a naturally gifted man to understand the doctrine and a still more marvelous person to teach it to another, this is further established by the summary of the same problem in *Philebus* 15 A-B. *ὁπόταν τὸ ἓν μὴ τῶν γιγνομένων τε καὶ ἀπολλυμένων τις τιθῆται . ὅταν δέ τις ἕνα ἄνθρωπον ἐπιχειρῇ τίθεσθαι καὶ βοῦν ἕνα καὶ τὸ καλὸν ἕν . περὶ τούτων τῶν ἑνάδων καὶ τῶν τοιούτων ἡ πολλὴ σπουδὴ μετὰ διαιρέσεως ἀμφισβήτησις γίγνεται πρῶτον μὲν εἴ τινας δεῖ τοιαύτας εἶναι μονάδας ὑπολαμβάνειν ἀληθῶς οὔσας εἶτα πῶς αὖ ταύτας, μίαν ἑκάστην οὖσαν ἀεὶ τὴν αὐτὴν καὶ μήτε γένεσιν μήτε ὄλεθρον προσδεχομένην, ὅμως εἶναι βεβαιότατα μίαν ταύτην μετὰ δὲ τοῦτ' ἐν τοῖς γιγνομένοις αὖ καὶ ἀπείροις εἴτε διεσπασμένην καὶ πολλὰ γεγονυῖαν θετέον εἴθ' ὅλην αὐτὴν αὑτῆς χωρὶς . . . ταὐτὸν καὶ ἓν ἅμα ἐν ἑνί τε καὶ πολλοῖς γίγνεσθαι.* It is not necessary, then, to rest the case for transcendence upon such passages as *Phaedo* 74 A-76 E, 78 D-80 B, 92 A-E, which have fallen under suspicion because they are connected with

not merely the testimony of Aristotle and Xenocrates as to Plato's belief in this matter but the words of Plato himself. If Aristotle has misunderstood or misinterpreted the doctrine of ideas, that misunderstanding or misinterpretation lies not in the imputation of the χωρισμός itself but in his conception of the necessary consequences involved in such a separation. It is obvious that he tends to press upon it the grossest possible interpretation, as when he insists that the ideas are merely "eternal sensibles" (*Metaphysics* 997 B 12) or when he argues that the ideas must be spatial if there is "participation" of them (*Physics* 209 B 33-35), even though he is well aware that Plato did not believe the separate existence of the ideas to be existence in time and place (*Physics* 203 A 8-9). In such arguments, as in much of Aristotle's criticism of the theory, the possible fallacy of the representation lies not in the imputation of separate existence to the ideas but in the prejudice that all real existence must be physical existence, a prejudice which is strikingly exemplified by Aristotle's attempt to *locate* his own prime mover (*Physics* 267 B 6-9).

It is necessary to treat with similar discrimination the reasons which are in these passages alleged for the separation of the ideas. The statement that Plato was impelled to this doctrine by the conviction that knowledge cannot have as its object the transient sensibles and that, consequently, the existence of knowledge requires the assumption of permanent entities separate from sensible particulars (*Metaphysics* 987 B 4-8, 1078 B 15-17) is amply supported by the dialogues (*Timaeus* 51 B-52 A [cf. *Republic* 477 E-480 A], *Cratylus* 439 D-440 B, *Philebus* 58 A-59 D; cf. *Metaphysics* 987 B 31-32: ἡ τῶν εἰδῶν εἰσαγωγὴ διὰ τὴν ἐν τοῖς λόγοις ἐγένετο σκέψιν with *Phaedo* 99 E ff); but the criticism that the permanence or eternity of these entities constitutes between them and the sensible particulars only a differ-

the arguments for immortality, or *Symposium* 210 E-211 E and *Phaedrus* 247 C-E, 249 B-C, which have been challenged because they occur in "myths" The "non-mythical" passages lend credence to these latter, while it should be noticed that Plato deduces the doctrine of immortality from the existence of the ideas and not the doctrine of ideas from the belief in immortality, but even apart from all such passages the evidence of Plato's writings decisively supports the interpretation of Xenocrates and Aristotle on this point

ence of duration which the Platonists mistook for a difference in the degree of reality (*Eth. Nic.* 1096 B 3-5) imputes to Plato a confusion of thought against which he expressly protests Eternity for Plato is not temporal duration; it is not a measure but a mode of being. The eternal is that which truly and simply *is*, and this characteristic distinguishes it from all that is subject to change or process, from all that is sensible and composite, from all that has a cause outside of itself (*Timaeus* 37 D-38 C, 27 D-28 C, *Phaedo* 78 C-D). The phenomenal world, involved in process as it is, cannot be called eternal; but the difference between it and the ideas in this respect is not one of *duration*, it is the difference between *timeless* being on the one hand and temporal duration on the other (*Timaeus* 38 C 1-3), between intelligible, stable, unambiguous reality and sensible, shifting appearance (cf. *Philebus* 58 E-59 D). Just as Plato, protesting against the common error of supposing that whatever is must be *somewhere*, argues that what truly *is* cannot be involved in the restrictions of place (*Timaeus* 52 B-C) so he insists that the ascription of duration to eternal being is a mistaken transference from the world of becoming, for temporal determination is in all cases a measure of process (*Timaeus* 37 E-38 A). So the "eternity" of the ideas does indicate their essential difference from phenomenal particulars, but this essential difference lies in their absolute reality independent of temporal and spatial limitations which are necessary characteristics of all sensibles Aristotle's charge that the ideas are merely "eternal sensibles" (*Metaphysics* 997 B 12) takes no account of the significance which Plato attached to the word ἀΐδιον;[126] and in the light of Plato's own words it is impossible

[126] Aristotle himself applies the word ἀΐδιον to the heavenly bodies which are αἰσθητά and κινητά (*Metaphysics* 991 A 10, 1069 A 30-31, 1069 B 25-26) and argues that the physical universe is ἀΐδιος because, as a whole, it is ἀγένητος and ἄφθαρτος (*De Caelo* 283 B 26-31, cf 282 A 25-B 9); but this "eternity" of the universe is really an uninterrupted temporal continuity, the continuous circular motion of the heavens and the continuous γένεσις of the sublunar world (*De Generatione* 336 B 25-337 A 7) So the change which constitutes for Aristotle the "eternity" of the material universe is exactly what Plato declares to be incompatible with eternal being; and it must be noticed that Aristotle himself admits that the perpetual process of generation is not truly οὐσία but only the closest possible approximation to it (*De Generatione* 336 B 30 34), while in

to admit the implication that it was merely a temporally durable principle which he sought in positing the ideas. On the other hand, Aristotle's own statements cast suspicion upon his contention that it was only because the Platonists were unable to explain the nature of their "imperishable substances" that they set out the universals as separate substances and so made them the same in kind as the perishables (*Metaphysics* 1040 B 30-1041 A 3, 1086 B 7-11). If, as Aristotle says, Plato posited the separate ideas because he agreed with Socrates that the universal is the object of knowledge but believed that there could be no knowledge of anything which is involved in the flux of phenomena (*Metaphysics* 987 B 4-8, 1078 B 12-17, 1086 A 37-B 4), the universals were assumed to be separate entities just because *they* are the objects of knowledge, and no other "imperishable substances" could have served the purpose which Plato had in positing ideas. That the same epistemological necessity which impelled Plato to "separate" the ideas required him to make these ideas the universals is confirmed by the dialogues; it is the universals which are the objects of knowledge, and so it is they that must have existence apart from the sensible world if knowledge is other than sensation and opinion.[127]

Physics 221 B 3-5 he says that τὰ ἀεὶ ὄντα ἢ ἀεὶ ὄντα οὐκ ἔστιν ἐν χρόνῳ The significant point, however, is that even where Aristotle attacks the "generation" of the world described in the *Timaeus*, he takes no account of Plato's distinction between "eternity" and temporal duration, for him the statement that the universe, having been created, will last for all time is equivalent to saying that though generated it is "eternal," ἀΐδιος (*De Caelo* 279 B 13, 280 A 10-11 [the conclusion of his argument against the Platonic apologists, where 280 A 7 is a reference to *Timaeus* 30 A 5], 280 A 30-32). The accusation of neglecting Plato's distinction must be shared by Xenocrates, who defined time as μέτρον τῶν γενητῶν καὶ κίνησιν ἀΐδιον (*frag* 40, on which, however, see note 350 *infra*). Here is another indication that the usage of the Academy as distinguished from that of Plato determined Aristotle's interpretation and criticism

[127] The epistemological necessity for the existence of the ideas is introduced by the question: are the concepts that we have really existing things or not? (cf *Phaedo* 65 D φαμέν τι εἶναι δίκαιον αὐτὸ ἢ οὐδέν; [cf *Protagoras* 330 C ἡ δικαιοσύνη πρᾶγμά τί ἐστιν ἢ οὐδὲν πρᾶγμα;], *Phaedo* 74 A 9-12, *Timaeus* 51 B 7-C 5, *Cratylus* 439 C 7-D 1) If knowledge is other than sensation and opinion, these concepts cannot be either the sensibles or anything merely derived from the sensibles, and so they must have a real and independent existence (*Timaeus* 51 B-52 A, *Phaedo* 65 C-66 A [cf. *Theaetetus* 184 B-186 E], 74 A-76 E,

Nevertheless, the evidence of the dialogues which lends support to Aristotle's account of the origin of the theory in epistemological considerations also shows that there is an element of truth in the apparently contradictory assertions. To vindicate knowledge and save the phenomena of mental activity was, as Aristotle's historical sketch has it, the primary reason for hypostatizing the Socratic "concepts";[128] but Plato indicates that

Cratylus 139 E 440 B). Plato does not ignore the mechanisms of association and abstraction; he believes rather that these mechanisms themselves can be accounted for only by assuming the separate existence of the objects of knowledge (cf. *Phaedo* 96 B ff., *Phaedrus* 249 B C and see pages 79-80 *supra*) On the epistemological necessity for the doctrine of ideas cf Cherniss, "Philosophical Economy of the Theory of Ideas," *A J P*, LVII (1936), pp 447-452

[128] The ethical concern of Socrates and the subject matter of the early dialogues make it probable that Plato's original incentive was the vindication of absolute ethical standards, but such an incentive, particularly in view of the current tendency to challenge normative ethics by means of relativism, must have led at once to the epistemological problem (cf Cherniss, *op cit*, *A. J. P*, LVII [1936], pp 446 449), and in the early dialogues it is plain that Plato considers the crux of all ethical problems to be the possibility of the objective existence of norms which can be known in their own essential nature (*Laches* 189 E-190 C, 198 D-199 E, *Protagoras* 330 C, 349 B, 360 E-361 A, 361 C, *Euthyphro* 5 C-D, 6 E, 11 A, 15 C-D, *Meno* 71 A-B, 86 C-D). This is quite a different thing from Stenzel's notion that the idea was originally not a "concept" but was confined to such things as accommodate themselves to ethico-teleological consideration, things which have an ἀρετή, and that the extension of the ideas to all things so as to approach the notion of "concept" came as the end of Plato's development of the theory (Stenzel, *Studien*, pp 27 f.). Stenzel believes that Socrates' answer to Parmenides' interrogation as to what kinds of ideas he posits (*Parmenides* 130 B D) confirms this interpretation of the origin, meaning, and development of the theory. The question of the extent of the world of ideas must be discussed later: now it is enough to notice that Socrates himself asserts here that he has before this suspected that the principle applies equally to all things, that Parmenides lays to youth and the lack of philosophy the failure to treat all things alike, and that Parmenides in his criticism of the theory does not confine himself to ethical and mathematical ideas but speaks, without objection on the part of Socrates, about ideal master and slave (133 D) and sums up the theory as one that posits a form and separate existence for every thing (135 A). Moreover, it should be remembered that the Socrates of the *Parmenides* is younger than the Socrates of the dialogues of earlier date, so that the passage in question, if it implies anything about these dialogues, ought to imply that the *older* Socrates of the *earlier* dialogues did posit ideas of all the things that Parmenides here mentions At any rate, its meaning cannot be that Plato had hitherto set up ideas only of ethical and mathematical notions. The *Republic* (596 A)

he considered this doctrine to be necessary not only because it alone could account for the possibility of knowledge in view of

explicitly says that the "accustomed method" is εἰδός τι ἓν ἕκαστον τίθεσθαι περὶ ἕκαστα τὰ πολλὰ οἷς ταὐτὸν ὄνομα ἐπιφέρομεν, and then proceeds to talk of ideas of bed and table (cf αὐτό τι ἕκαστον opposed to τὰ πολλὰ ἕκαστα, *Republic* 493 F, and 507 B καὶ οὕτω περὶ πάντων ἃ τότε ὡς πολλὰ ἐτίθεμεν .) The *Phaedo* gives the same universality to the theory (cf 75 C-D [περὶ ἁπάντων οἷς ἐπισφραγιζόμεθα τὸ αὐτὸ ὃ ἔστι καὶ ἐρωτῶντες καὶ . ἀποκρινόμενοι], 78 D, 100 B [καὶ τἆλλα πάντα]) and mentions along with ethical and mathematical ideas the ideas of size, health, strength (65 D-E), hot, and cold (103 C-E, cf. 103 B 5) In the *Meno* (72 A-73 C) bees, health, size, strength are treated in exactly the same fashion as the virtues as being what they are in virtue of a certain οὐσία, a certain εἶδος which is ἓν καὶ ταὐτόν for all the individuals of each multiplicity. It is this which must be discovered in each case where a definition is sought (cf *Euthyphro* 11 A). Where in the *Laches* (198 D-199 E) the timelessness of knowledge and of its objects is emphasized, this is stated as true of *all* knowledge, of medicine and the health that is its object, of agriculture and the plants which it knows, and of military strategy, as well as of the good and evil of which virtue is the science Whether or not Plato has the ideas in mind here, it is certain that he conceives *all* objects of knowledge as such to stand on the same plane.

In so far as Stenzel's argument that the ideas were not originally "concepts" rests upon his notion that they were restricted at first to the ethical sphere (*Studien*, p 28), it is refuted by the evidence above It is, however, difficult to be sure just what is meant by his thesis If it is only that the ideas were not "concepts" in the modern sense (*Studien*, p 12), no objection can be made to it, for they were certainly not merely "thoughts in the mind" (*Parmenides* 132 B-D, *Studien*, p 31) nor were they "abstractions" (*Phaedo* 96 B, *Studien*, pp 14, 106-7), but they were the objective correlates of the mental concepts and it is their objective existence that makes all abstraction possible (*Phaedrus* 249 B-C, cf *Parmenides* 132 B-C, 135 B-C, *Philebus* 16 D 2 [εὑρήσειν γὰρ ἐνοῦσαν, cf Shorey, *What Plato Said*, p 604 on 16 D and n b *Philebus* 57 E-59 D. ἡ τοῦ διαλέγεσθαι δύναμις is primary because its objects are transcendent ideas]; cf pages 73-80 *supra*) Stenzel is quite right in insisting upon "die Einheit, das Seiende, Ruhende, Unveranderliche der Idee", but that this is "im Gegensatz zum Begriff, der sich erst in Urteilen darstellen kann" (*Studien*, p 5) and that in the later dialogues the idea, in being extended to the point where it approaches the "concept" in this sense, "lediglich zur Einheit des unter ihr befassten Mannigfaltigen oder Vielen zu werden beginnt" (p. 21),—this interpretation of the "development" of the idea and consequently that of its early significance is contradicted by the later dialogues themselves The *Philebus* is for Stenzel the clearest proof of this change (*Studien*, pp. 97-105); yet at the end of that dialogue (59 C) it is said of the entities with which dialectic deals (cf. 57 E-58 A): περὶ ἐκεῖνα ἴσθ' ἡμῖν τό τε βέβαιον καὶ τὸ καθαρὸν καὶ ἀληθὲς καὶ ὃ δὴ λέγομεν εἰλικρινές, περὶ τὰ ἀεὶ κατὰ τὰ αὐτὰ ὡσαύτως ἀμεικτότατα ἔχοντα. This

the instability of sensible phenomena but also because phenomenal change itself is possible only upon the assumption that there exist entities themselves not involved in this change Change or constant process Plato held to be the essential characteristic of the sensible world; such is the report of Aristotle, and such is the evidence of the dialogues from the *Phaedo* to the *Timaeus* (*Phaedo* 78 D-E, 79 A 9-10; *Symposium* 207 D-

passage Stenzel does not mention, yet how does it differ from the statements of the *Phaedo* (66 A *αὐτὸ καθ' αὐτὸ εἰλικρινὲς ἕκαστον . τῶν ὄντων*), the *Symposium* (211 A-E), and the *Republic* (477 A *μεταξὺ τοῦ εἰλικρινῶς ὄντος καὶ τοῦ αὖ μηδαμῇ ὄντος*, cf 478 D, 479 D)? Stenzel makes much of the epithet *μορφοειδές* in the *Phaedo* and *Symposium* as indicative of the earlier notion of the idea which he takes to be incompatible with that of the later "concept" (*Studien*, p 44), but the *ἀμεικτότατα* of the *Philebus* means nothing different, and in the *Timaeus* the ideas are called *ἀμέριστος καὶ ἀεὶ κατὰ ταὐτὰ ἔχουσα οὐσία* (35 A, 37 A, see note 337 *infra*) The "intercommunion of ideas," then, was not a "discovery" which, enabling Plato to solve the problems of the *Parmenides*, involved the rejection of the indivisible unity of the transcendent ideas (*Studien*, p 97), both the *unity* and the intercommunion are mentioned together in *Republic* 476 A (cf Shorey, *ad loc*) Stenzel struggles against this passage, for he confesses that if it refers to the *κοινωνία* of the *Sophist* it alone refutes his thesis (*Studien*, pp 50-52); he, therefore, interprets it to mean that "die εἴδη 'schemen' vielen und wer sie in dieser Vielheit nur erkennt, der ist *φιλοθεάμων*" whereas "die Absicht des Philosophen geht völlig auf eine rein, ubersempirische Darstellung der εἴδη an sich." The passage, however, says that the *φιλοθεάμων* delights in *sensibles* only and being unable to apprehend *τὴν φύσιν αὐτοῦ τοῦ καλοῦ* does not believe in *αὐτὸ κάλλος* while the philosopher can distinguish *both* the *αὐτὸ καλὸν* and *τὰ ἐκείνου μετέχοντα* Far from denying the concern of the philosopher with the *κοινωνία*, it implies that only he can apprehend it, for only he understands the nature of the idea that makes it possible (Cf further *Republic* 454 A and *Cratylus* 424 B-425 B and, on these passages against Stenzel, Friedlander, *Die Platonischen Schriften*, pp 212, n 1 and 382, n 2) That this nature is unity does not contradict the doctrine of the *Sophist* where it is still said of the idea *ἓν μὲν αὐτό ἐστιν* (257 A) and *οὐκ ἔστιν ἕκαστον αὐτῶν* (i e. *τῶν ἄλλων γενῶν*) *οὐδὲ σύμπαντα τὰ ἄλλα πλὴν αὐτό* (259 B) The "problem" remains as much of a problem in the *Philebus* as it was in the *Parmenides* and as it will always be (cf *Philebus* 15 D), and there is no sign that the ideas were more or less "concepts" at the end than at the beginning Robin has pointed out that the *Phaedo* itself "anticipates" the doctrine of the *Sophist* in assuming the "communication" of ideas with one another (*Platon*, pp. 109 and 274 on *Phaedo* 103 C-105 B) See on the unity of the idea and diaeresis pages 38-42 *supra*, and on Stenzel's notion that the idea as "concept" presupposes a theory of predication, Shorey, *Plato's Republic* (Loeb), II, p. xx, n. *e*.

208 B; *Philebus* 59 A 2-B 3, *Timaeus* 27 D 5-28 A 4, 49 C 7-E 7, 52 A 4-7). In the *Theaetetus* Plato examines the hypothesis that reality consists in nothing but such process, that *all things are constantly changing* (179 D 1-5, 181 B 8-C 2), and shows that, involving as it does continuous alteration as well as local motion, it would destroy the possibility of qualities and of sensation itself and would not only leave no room for fixed states and determinate processes but must also involve the denial of the law of contradiction (*Theaetetus* 181 C-183 B) In short the very "processes" into which all phenomenal existence is resolved by this hypothesis (cf. *Theaetetus* 156 C-157 C) imply the existence of immutable, determinate entities; otherwise it is no more possible to say that all is in motion than that all is at rest, and the phenomena which apparently have no stability at all must be supposed to be in fact most stable and certain (cf. *Timaeus* 49 D 4-E 4 and 51 D 5-7; *A. J. P.*, LVII [1936], pp. 452-456) Aristotle himself puts the same argument in his attack upon the relativists in *Metaphysics* Γ, a passage which is patently influenced by the *Theaetetus* (cf. 1010 B 12 and *Theaetetus* 178 C, 1012 B 13-18 and *Theaetetus* 171 A C, 1009 B 1-11 and *Theaetetus* 158 A-E, even the "doxographical" extension of relativism in 1009 A 11-31 may be a "scientific improvement" upon *Theaetetus* 152 D-E) The Protagorean doctrine is involved in the denial of the law of contradiction (1009 A 6-12, cf. 1008 A 31-34 and *Theaetetus* 183 A) and connected with the Heraclitean theory of flux (1010 A 10-15); the reason for the rise of the doctrine is said to be the failure to recognize non-sensible entities (1010 A 1-5) and to distinguish between change of quantity and change of quality, the latter alone of which concerns the essence and the form in accordance with which we know all things (1010 A 22-25, cf. 1063 A 22-28). In fact, Aristotle contends, the consequence of this theory is rather that all things are at rest than that all is changing, for, since all attributes are true of everything, there is nothing to which anything can change, change itself implying *termini* of change (1010 A 35-B 1, cf. 1063 A 17-21). Twice he repeats that those who deny the law of contradiction on the ground that everything is constantly changing must be shown that there exists something which is immobile and exempt from

change (1009 A 36-38, 1010 A 33-35); for him too change itself implies the existence of immobile *termini* (cf. *Physics* 224 B 1-16) as for Plato process implies unchanging existence toward which the process aims as its term (*Philebus* 54 C, 26 D 7-9 [cf. *Philebus* 53 D-E and *Phaedo* 75 B]). There was, then, an ontological as well as an epistemological reason for positing eternal, unchanging entities apart from the sensible particulars; and to this extent Aristotle is justified in giving a reason other than the desire to establish the objects of knowledge. When he goes on to object, however, that there was no reason for making these imperishables the universals except that the Platonists did not know how else to describe them, he is surely mistaken. Plato was concerned to "save the phenomena" of the sensible world of flux, to explain the shifting perceptibles not to "explain them away," just as he sought to account for error and not to deny it. If then the sensible phenomenon is not a definite object (ἐκεῖνο) but always a degree of approximation (τοιοῦτον οἷον ἐκεῖνο), the transient phenomena themselves imply absolute and immutable entities which are the standards and causes of these approximations, and the standards must be the perfect characters which are imperfectly represented by the transient sensibles (cf. *Phaedo* 74 C-75 B, *Timaeus* 49 D-E [cf. *Cratylus* 439 E], 51 B 4-6).[120] The ontological reason for as-

[120] It is the contention of E. Weerts that Plato did not himself hold the doctrine of the continuous flux of phenomena and that, consequently, the theory of ideas was not in its origin due to this "Heraclitean" view of the sensible world but rather to the "Eleatic aporia" that, since phenomena exhibit contrary characteristics and this cannot be true of what really is, some other οὐσία must be assumed (*Plato und der Heraklitismus*, 1931 [*Philologus*, Suppl. XXIII, 1]). Now that the consistent elaboration of the doctrine of flux is a Platonic λόγος is probably true, Plato indicates clearly enough that the implications of qualitative alteration as distinct from local motion, implications so important for the notion of flux as he presents it, were not recognized by his predecessors (*Theaetetus* 181 C-D, 182 A-B [cf. *Cratylus* 439 D 9-10, 440 A 1] and ποιότης [*Theaetetus* 182 A 8]). This, however, does not mean that the notion of the flux itself was not suggested to Plato by "Heracliteans", it indicates merely that in Plato's opinion the doctrine *when followed to its logical conclusion* is self-refuting without the supplementary assumption of non-sensible entities. The basis of Weerts' thesis is the argument that Plato *could* not have asserted the continuous flux of sensibles without making of the sensible world a μὴ ὄν and destroying the very possibility of μέθεξις, but the dialogues show that the con-

suming ideas requires that these ideas be the common characteristics represented in the sensible world Aristotle's failure to admit this seems at first glance the more strange because his own doctrine of form as the limit of change is obviously related to this phase of the theory of ideas and probably derived from it (cf. *Metaphysics* 1069 B 35-1070 A 4, *Physics* 224 B 11-13). Nevertheless, Aristotle argues that this function of the formal cause is not forwarded by making it a separate entity, so that this is no good reason for positing the Platonic ideas (*Metaphysics* 1033 B 16-29). While the form in this sense, however, is just an immanent characteristic and so not a separate and eternal substance (cf. Ross, *Metaphysics*, II, p 188), Aristotle could not dispense entirely with such substances when he came to account for the continuous movement of the universe; and the separate and eternal substantiality to which he objects in the Platonic ideas reappears in his planetary movers and in God, who is a kind of Platonic idea, the form of the world (*Metaphysics* 1073 A 3-B 3, 1075 A 11-15). That he saw the similarity between these eternal substances of his and the Pla-

tinuous flux of sensible objects, in the full sense of his interpretation of that notion, was a fundamental *datum* of Plato's philosophy (*Symposium* 207 D-E, *Philebus* 59 A-B, *Timaeus* 52 A-C) Nor is the relativity of particular sensibles, which Weerts calls the "Eleatic aporia," distinguished by Plato from the transience of the sensible world but is treated rather as the sensible indication of the latter physical fact (*Theaetetus* 152 D-E [cf *Phaedo* 78 D-E], *Republic* 524 A-C [cf *Timaeus* 62 B] and *Theaetetus* 186 A-B) Plato did, as Weerts says, seek to save the sensible phenomena and not consign them to non-being, and, as Weerts sees, this requires besides the ideas another absolute term if participation is to have a consistent meaning, but this Plato saw too, and the hypothesis of χώρα is the answer which in itself is proof that he tried to maintain the doctrine of continuous process for the nature of the physical world (*Timaeus* 48 E-52 C)

To what extent Plato was justified in his interpretation of "Heraclitean doctrines" is beyond the scope of the present study to decide (cf *Crit Pres. Phil*, pp 380-382), but, even though his elaboration of the doctrine of flux may have altered the form which it had for those from whom he adopted it, this does not impeach Aristotle's account of the importance of the doctrine in the history of the theory of ideas It is true too that the dialogues offer no positive corroboration of Aristotle's statement that it was Cratylus from whom Plato adopted the theory of flux, but neither do they offer any ground for disbelief, and we have no other basis on which to challenge the account (Ross, *Metaphysics*, I, p xlvii).

tonic ideas is clear from *Metaphysics* 1071 B 14-20 where he admits that the ideas would satisfy the necessity which he has demonstrated for eternal substances but objects that they are useless in this regard because the substances needed must not only be eternal but must have actuality as their essence It should now be clear that, when Aristotle says that the ideas were posited as an answer to the need for imperishable substances of some kind, he is recognizing the ontological reason for the doctrine, and that, when he objects to the use of the universals for this purpose as nothing but a desperate attempt on the part of the Platonists to find a way out of their embarrassment, he is thinking of the ideas as the analogue of the planetary movers and the God of his own system, as is indicated by the reference to the stars and eternal substances in *Metaphysics* 1040 B 34-1041 A 3. The different attitude to the two reasons for positing ideas derives from his own doctrine of substance 1) the objects of knowledge *are* universals but as universals they cannot be separate substances, 2) eternal substances there must be but as substances they cannot be the universals

Aristotle's tendency to interpret the theory of ideas from the point of view of his own conception of substance is most clearly illustrated by the passage at the end of the book of problems in which he puts the question why it is at all necessary to look for entities other than the sensibles and mathematicals,—such things, that is, as εἴδη [130]

***Metaphysics* 1002 B 12-32**

[130] ***οἷον ἃ τίθεμεν εἴδη*** (see Appendix II) Since for the antithesis of this problem (1002 B 30-32) Aristotle refers back to 999 B 27-1000 A 4 for a statement of the difficulty which he considers to be fatal to the Platonic ideas, it is impossible to see in this phrase an indication that he still considered himself as a partisan of the Platonic theory, which he has already treated as absurd in 997 B 5 998 A 19 The question of the existence of some kind of formal entities, however, still remains, even if the Platonic ideas be rejected, as is shown by the general problem at 999 A 24 B 24, and here the necessity for positing forms of some kind is represented not only as a necessity recognized by Aristotle but felt, though not formulated, by the Platonists also It is noteworthy that when he comes to the kind of εἴδη posited by the Platonists, i e. the *Ideas*, he calls them τὰ εἴδη (1002 B 23, 26, 29, 30), whereas in 1002 B 13-14 he uses εἴδη *simpliciter*. The complement to the οἷον ἃ τίθεμεν εἴδη here is the statement of 1059 A 11 οὐκ ἐνδέχεται εἶναι εἴδη τοιαῦτα οἷα λέγουσί τινες (cf. 1002 B 23: οἷα λέγουσι τὰ εἴδη τινές), i e the Platonists erred not in positing εἴδη but in positing the particular kind of εἴδη which they did.

The reason which he here gives for assuming such entities is represented as being the real motivation of the theory of ideas. Since sensibles and mathematicals have only specific unity, unless there are some such entities as the ideas that some people assume, there can be no substance at all which is numerically one nor can the principles of things be numerically determinate This, then, is what the proponents of the theory intend, *although they do not clearly articulate their meaning* (cf *Metaphysics* 989 A 30-33, 989 B 4-6; *De Gen. Animal.* 769 A 35-B 2), and they must mean that each of the ideas is a substance and that none is an accident. In view of Aristotle's own statement it is hardly necessary to argue that as a description of the origin of the theory of ideas this representation is unhistorical. The dialogues indicate clearly that the uniqueness of the idea as the objective correlate of thought is implied by the unity of the mental concept which is always identical with itself (cf *Parmenides* 132 A 1-5, 132 B-C, *Phaedo* 74 C 1-2, *Cratylus* 439 D 5-6, *Theaetetus* 195 D-E), Aristotle himself testifies that the unity of a concept was taken as guarantee of the existence of a corresponding unique idea (*Metaphysics* 990 B 22-26) and preserves the kernel of this doctrine in his own system in so far as he contends that what is the object of a single and indivisible act of thought is by that token one and indivisible (*Metaphysics* 1052 A 29-36, cf. 1016 B 1-16).[131]

Since the ideas are entities the existence and nature of which are not contingent upon the existence of anything external to

[131] In *Metaphysics* 999 A 24-B 24, the statement of the general problem as to whether the existence of the particular sensibles implies the existence of other realities, Aristotle adopts in the "thesis" both the epistemological and the ontological argument for the necessity of positing ideas, although he is not here concerned with that theory specifically—999 A 28-30 *ἢ γὰρ ἓν τε καὶ ταὐτόν, καὶ ἢ καθόλου τι ὑπάρχει, ταύτῃ πάντα γνωρίζομεν*, so that there must be something other than the particulars 999 B 1-3 if there is nothing besides the particulars, there would be nothing intelligible but all would be sensible and there would be knowledge of nothing, *εἰ μή τις εἶναι λέγει τὴν αἴσθησιν ἐπιστήμην*. 999 B 3-12 there would be nothing eternal or immobile, since all sensibles perish and are in motion; but without terms of process there can be no process For the necessity of the form as the limit of process cf *Physics* 224 A 34-B 13, *Metaphysics* 1015 A 10-11, 1069 B 35-1070 A 4, for the epistemological argument cf *Metaphysics* 999 B 26-27, 1086 B 32-37, *Anal Post* 77 A 5-9 (see pages 71-72 *supra*)

themselves, whereas phenomenal multiplicities have specific identity which is derived from the numerical identity of the ideas, it might seem harmless enough to say that the idea is a substance and not an accident, especially since Plato himself applies the word οὐσία to the ideas (*Phaedo* 65 D-E, 76 D, 78 D, etc., cf Peipers, *Ontologia Platonica*, pp. 67 ff). For Aristotle, however, the word οὐσία has peculiar implications; from the fact that each idea is an unique entity (cf. also *Metaphysics* 987 B 18, 1082 B 26) he infers that the Platonists meant to make the idea a substance in his own sense of the word and consequently that the motivation of the theory of ideas must have been the same as that which impelled him to assert the priority of substance to all the other categories and to grant them existence only incidentally as predicates of substance. If the theory of ideas was an attempt to solve the same problem as that which he has formulated in his doctrine of substance, then he feels that it is legitimate to interpret the theory according to that formulation and to criticize it wherever it fails to satisfy the conditions imposed by that formulation. So in the present interpretation of the motivation and intention of the theory of ideas are implicit the arguments against it which are based upon Aristotle's conception of substance. It is clear, for example, that if the idea is meant to be οὐσία in his sense there can be no idea of a common predicate, for a common predicate is not properly substance but has its existence only incidentally. As numerically unique substances, moreover, the ideas must be indefinable (1040 A 8-9); nor can they be the principles of the world of multiplicity. Aristotle refers (1002 B 30-32) to the problem concerning the ἀρχαί (999 B 24-1000 A 4) which he thus applies to the ideas regarded as unique substances The existence of numerical unity and the possibility of knowledge seem to require that the principles be more than merely specific unities; but, if each of the principles is numerically one, there can be nothing apart from the elements, since what is numerically one is individual and the uniqueness of the principle as an individual substance would preclude the existence of two or more things of the same nature.

2. The Formal Demonstrations and their Rebuttal

After the review of earlier philosophies in *Metaphysics* A Aristotle concludes that, while none of his four causes has been adequately determined, all previous thinkers have sought to express one or the other of them As for the essence or substantial reality, i. e. formal cause, although no one has explained it clearly, it has been most closely approximated, he says, by those who posit the ideas, which are conceived not as the matter of sensibles nor as the origin of motion but as the essence of each of the other things.

Metaphysics 988 A 34-B 6

Similarly in a general criticism of Platonic philosophy which occurs in the midst of *Metaphysics* A, chap. 9, he charges the Platonists with having abandoned the goal of philosophy. That goal is research into the cause of perceptible existence, but the Platonists say nothing about the cause which is the origin of change nor do the ideas have any connection with the final cause in virtue of which all intelligence and all nature operate. This neglect of efficient and final causality is for Aristotle an indication that these thinkers have substituted mathematics for philosophy (cf 996 A 21-32 and, for Aristotle's attempt to vindicate the connection of mathematics with final causality, 1078 A 31-B 5); and this judgment is confirmed, he believes, by the fact that what in their system is analogous to his own material cause is itself only a quantitative differentiation which is rather a predicate of matter than matter itself and so must imply a substance as its underlying subject It is only in its attempt to determine formal causality and to explain the substantial reality of phenomena on this basis that Aristotle recognizes the Platonic theory as having the proper direction which his theory of causality has outlined for philosophy. Even here, however, the solution is unsatisfactory, for the Platonists, thinking that they are explaining the substantial reality of phenomenal existence, merely assert the existence of other substances but do not explain how these can be the substance of perceptible things, for their " participation " is nothing but an empty catchword [132]

Metaphysics 992 A 24-B 9

[132] On the use in this passage of the 1st person plural to refer to Platonic doctrine (*εἰάκαμεν*, *λέγομεν* [992 A 25], *φαμέν* [992 A 27]; *λέγομεν* [992 A 28];

In opposing the theory of ideas, therefore, Aristotle does not deny the existence of some such formal principles but only the

the *φαμέν* of 992 A 31 is not parallel to these but to the *ὁρῶμεν* of 30 and the *εἴπομεν* of 29) see Appendix II The passage, 992 A 24-B 9, is a unit which was apparently intended to stand at the end of a criticism of the Platonic theory and to sum up that critique by concluding that none of the four causes had been adequately explained by the Platonists It has, however, no connection with the immediately preceding passages (991 B 9-992 A 24) which deal with the theory that the ideas are numbers and with "the reduction of substances to the principles," whereas the passage immediately following it (992 B 9-18) is again concerned with the reduction of all things to unity as an ultimate principle and with the interrelationship of ideal lines, planes, and solids The passage is further distinguished from the preceding and following ones by the fact that in 992 B 4 "the great and the small" is treated as the material principle of sensible existence (cf 992 B 1-7 and *Physics* 187 A 12-20, 189 B 8 16), *not* as an element in the ideas, as Alexander, influenced by the different discussion of 992 A 10-13, mistakenly understands it (Alexander, *Metaph*, p 123, 7-9 [cf p 117, 25-28], so also Robin, *Idées et Nombres*, n 101 [p 95], but see pages 118-123, 196 *supra* and Appendix I and Ross, *Metaphysics*, I, p 208 [on 992 B 7], Asclepius [*Metaph.*, p. 105, 26-27] in consequence of this misinterpretation took *εἰ δὲ μή* [992 B 8] to mean *εἰ δὲ μὴ κινοῦνται αἱ ἰδέαι*, whereas it means *εἰ δὲ μὴ ταῦτα* [*καὶ τὸ μέγα καὶ τὸ μικρόν*] *κίνησις* . . and Alexander [*Metaph*, p 123, 10-11] *apparently* made the same mistake *εἰ δὲ μὴ κινήσεις, πόθεν ἡ κίνησις ἐν τοῖς φυσικοῖς τοις κατὰ τὴν ἐκείνων μετοχὴν οὖσι τούτοις ἃ ἐστιν*) This same error of interpretation induced von Arnim (*Wiener Studien*, XLVI, pp 28-29), who saw that 992 A 24 ff has no connection with the immediately preceding passage, to treat 992 A 24-B 1 as a unit but to say that 992 B 1 returns to the subject which is interrupted at 992 A 24 The résumé, however, ought to include a treatment of the material cause as well as of the other three, the words *ἔτι δὲ τὴν ὑποκειμένην οὐσίαν ὡς ὕλην μαθηματικωτέραν ἄν τις ὑπολάβοι . . .* (992 B 1-2) are clearly motivated by *ἀλλὰ γέγονε τὰ μαθήματα τοῖς νῦν ἡ φιλοσοφία* (992 A 32-33), and can hardly be separated from them, and the opening words of the passage, *ὅλως δὲ ζητούσης τῆς σοφίας περὶ τῶν φανερῶν τὸ αἴτιον, τοῦτο μὲν εἰάκαμεν* are echoed in those of 992 B 8 9, *ὅλη γὰρ ἡ περὶ φύσεως ἀνῄρηται σκέψις* The burthen of the passage is the failure of the Platonic theory to explain the *phenomenal* world, as such it is clearly related to the "physical" refutation of 991 A 8 B 9 (cf 991 A 8-10 *πάντων δὲ μάλιστα διαπορήσειεν ἄν τις, τί ποτε συμβάλλεται τὰ εἴδη τοῖς ἀιδίοις τῶν αἰσθητῶν ἢ τοῖς γιγνομένοις καὶ φθειρομένοις*, and cf 992 A 29 [*ὥσπερ καὶ πρότερον εἴπομεν*] with 991 A 20-22) There are, however, strong indications that 991 A 8-B 9 is an outline of arguments which had been more fully developed in the *περὶ ἰδεῶν* and that the discussion beginning at 992 A 10 comes from the *περὶ φιλοσοφίας*, while in the latter but *not* in the former writing the question of idea-numbers was considered (cf Appendix II and the paper of H. Karpp there cited) If, then, 992 A 24-B 9 is related in origin to the passages drawn from the *περὶ ἰδεῶν*, it should contain no reference

nature and manner of existence ascribed to these formal principles by the Platonists (*Physics* 193 B 3-8, *Metaphysics* 1033 A 24-1034 A 8, 1086 B 5-13; cf the statement concerning mathematicals, 1076 A 36-37); the cogency of the reasons which gave rise to the theory he tacitly admits by adducing them as reasons for assuming the formal principles which he himself posits (see note 131 *supra*), contending only that the Platonic ideas as such are neither necessary nor adequate for the solution of the problem. The reasons which motivated the theory of ideas, however, must be distinguished from the formal arguments contrived to prove the existence of the ideas, even though the nature of these arguments may in some cases have been influ-

to theories of the ideas as numbers Now it is significant that, where in this passage Aristotle complains that γέγονε τὰ μαθήματα τοῖς νῦν ἡ φιλοσοφία, he does not support the charge by mentioning the idea-numbers, although that theory was discussed in 991 B 9 ff, but connects it with the neglect of final causality and the peculiar character of the material principle Nor need the remark in itself have been a reference to idea-numbers The concern with formal causality to the neglect of the efficient and final causes would be enough to justify the complaint in Aristotle's eyes (cf *Metaphysics* 996 A 21-32, *Physics* 198 A 14-B 9 [especially A 16 18 and Ross, *Physics*, p 525], and see page 383 and note 302 *infra*), while the "separation" of the essence, on which basis alone he criticizes the Platonic treatment of formal causality in this passage, is in *Physics* 193 B 35 194 A 7 treated as an invalid extension of mathematical method, a substantial separation of what is not separable even in thought (see pages 203 204 *supra*).

The phrase, τοῖς νῦν, has been explained as a reference to those of Plato's pupils who "had practically forgotten the doctrine of ideas" (Zeller, *Phil Griech*, II, 1, p 758) or "primarily to Speusippus" (Ross, *Metaphysics*, I, p 208, cf Bignone, *L'Aristotele Perduto*, I, p 205), but, while Speusippus is elsewhere referred to as τῶν νῦν τινί (1091 A 34, cf 1072 B 30 34), οἱ νῦν is also used to refer to Plato, Speusippus, and Xenocrates together in 1069 A 26-27 (cf 1069 A 33-36) Speusippus, in fact, is the one Platonist who *should not* be intended in this passage, since here it is taken for granted that the "separate essences" are *ideas* (992 A 32, B 8) Moreover, the φασκόντων τῶν ἄλλων χάριν αὐτὰ δεῖν πραγματεύεσθαι certainly refers to Plato (*Republic* 531 D, 533 B E, 534 E, 536 D, cf *Philebus* 57 E), so that the τοῖς νῦν must at least include him (note the direct appeal to the *Phaedo* at 991 B 3). The complaint is so general, however, that it might well have had one meaning in its original context and have taken on quite another when transferred to its present position where it follows passages which deal with mathematical developments of Platonic theory; this is a consideration with which we must always reckon in the case of authors who repeat in new contexts passages which they had composed for the specific purposes of an earlier work

enced by the origins of the theory. Against these formal arguments Aristotle brings a direct attack which, if valid, would not so much disprove the existence of ideas as it would show that the supposed proofs of the Platonists are not conclusive.

In Books A and M of the *Metaphysics*, immediately after the charge that the theory of ideas results in a mere "duplication" of the objects which it is supposed to explain (see pages 198-199 *supra*), Aristotle says that none of the arguments used to prove the existence of ideas makes their existence plausible, for from some no inference necessarily follows and from some it follows that there are also ideas of objects of which the Platonists do not think that there are ideas (990 B 8-11 = 1079 A 4-7).[133] No further attention is paid to the first of these two kinds of demonstration, however; instead of making any attempt to show that the supposed conclusion does not logically follow from some or any of the Platonic demonstrations, Aristotle proceeds at once to the second part of his contention, namely that some of the Platonic arguments prove more than is consistent with the doctrines of the Platonists themselves.[134] According to the arguments from the sciences there would be ideas of all things of which there are sciences; according to that of the one over the many there would be ideas of negations also; according to the contention that something is thought even after the object has been destroyed there would be ideas of perishables. Furthermore, of the more accurate arguments (990 B 15: ἀκριβέστεροι, 1079 A 11 ἀκριβέστατοι) some make ideas of relative terms whose class the Platonists say does not exist καθ' αὑτό, and some imply the "third man" (990 B 11-17 = 1079 A 7-13)

Metaphysics 990 B 8-17, 1079 A 4-13

The various arguments here referred to in this stenographic fashion are expounded by Alexander, who at the beginning and end of his account refers to Aristotle's writing περὶ ἰδεῶν[135]

[133] On the first person plural, which in A occurs in this passage at 990 B 9, 11, 16, 23 (the reading of 18 being doubtful) and in the corresponding passage of M is replaced by the third person plural, see Appendix II.

[134] See Appendix III

[135] What Alexander expressly says is only that the Platonists made use of the sciences in various ways to establish the ideas, as Aristotle says in the first book of the περὶ ἰδεῶν. To this he adds at once ὧν δὲ νῦν μνημονεύειν ἔοικε λόγων,

Of the arguments from the sciences he gives three examples (*Metaph.*, p. 79, 5-15).—1) If each science functions in reference to a single identical object and not to any of the particulars, there must be, answering to each science, something other than the sensibles which is eternal and a pattern of the particulars in each field of knowledge. Such a thing is the idea 2) The objects of the sciences exist, but these objects are something apart from the particulars, for the latter are unlimited and indefinite whereas the objects of the sciences are determinate Therefore, there exist objects apart from the particulars, and these are the ideas. 3) If medicine is the knowledge not of this particular health but of health unqualifiedly, there must be a health-in-itself; and, if the objects of geometry are not this particular equal and commensurable but the equal and commensurable without restriction, there must be an equal-in-itself and commensurable-in-itself. These are the ideas.

There follows a triple objection to these arguments (pp 79, 15-80, 6).—1) Such arguments prove not that the ideas exist but only that there is something besides the sensible particulars. This is not the same thing, however, for besides the particulars there exist the common predicates which we say are the objects of the sciences 2) They show that there are ideas of artefacts also, for every art refers its products to a single standard, and

εἰσὶ τοιοῦτοι (*Metaph.*, p. 79, 3-5) Again, after having commented on the "third man" argument he says that Aristotle used one form of it in the *περὶ ἰδεῶν* (*Metaph*, p. 85, 11-12) On the basis of these two statements alone it is, of course, impossible to say with certainty how much of the commentary on 990 B 11-17 was drawn from the *περὶ ἰδεῶν*; in the remarks on the "third man," for example, besides the reference to this work the *περὶ λέξεως* of Eudemus is cited (on the reference to Phanias' *πρὸς Διόδωρον* see Appendix IV). Nevertheless, it is significant that the *περὶ ἰδεῶν* is mentioned at the beginning and at the end of the commentary on 990 B 11-17, and it speaks in favor of Alexander's knowledge of the work that he does not refer everything in A, chap. 9 to it as a commentator would be likely to do who knew only a vague tradition that such a book had been written by Aristotle (see Appendix II; cf Robin, *Idées et Nombres*, n. 17, II [pp 604-5], Karpp, *op. cit.*, *Hermes*, LXVIII [1933], pp. 384-391). Rose prints as *fragments* 187 and 188 the following passages from Alexander *Metaph*, pp 79, 3-19, 80, 8-16, 81, 25-82, 1 (*frag* 187); pp. 83, 33 84, 7, 84, 21-85, 5, 85, 9-12 (*frag.* 188). Since he omits certain passages which should be considered, I cite the pages of Alexander instead of the fragments.

the objects of the arts exist and are something other than the particulars. 3) The last argument, besides failing to prove the existence of ideas, would appear to establish ideas of things of which they do not desire that there should be ideas, for the argument which in the case of medicine leads to a health-in-itself applies to every art also. The objects of the arts are not particulars, the objects of carpentry, for example, are not a particular bench or bed but bench and bed without qualification, and the same is true of the relation of every art to its objects. Consequently there would be an idea of every object of art, which they do not admit.

The argument of "the one over many" is explained as follows (p 80, 8-15): If each of the multiplicity of men is a man and of animals an animal and so forth, and if there is not in the case of each individual something which is predicated of itself but there is something which is predicated of all the individuals in the multiplicity but is not identical with any one of them, there would be besides the particular individuals something which exists separate from them and eternal, for it is always predicated equally of all the members of the changing multiplicity The unity in a multiplicity of individuals, separate from them and eternal, is an idea; therefore, there are ideas.

According to Alexander (pp. 80, 15-81, 10), Aristotle says that this argument establishes ideas of negations and of non-existents, for one and the same negation is predicated of many things and of things that are not, and it is not identical with any of the subjects of which it is truly predicated but continues always to be truly predicated equally of similar objects. Not-man and not-musical, for example, fulfill all the requirements of the idea so established. So there are ideas of negations, which is strange, for, if there were an idea of not-being, there would be a single idea of completely dissimilar things—of line and man, for example, inasmuch as both are not horses—and a single idea of the unlimited objects and also of things which stand in the relationship of prior and posterior to each other—of animal and man, for example, inasmuch as both are not wood Yet the Platonists do not wish to admit single classes or ideas of such things. It is, however, clear that this argument does not prove the existence of ideas but only tends to show

that the common predicate is other than the particulars of which it is predicated. After this exposition Alexander adds (p. 81, 10-22) that those who posit ideas themselves use the argument "from negations" to establish their thesis If one in denying something of several individuals makes this denial with reference to some one thing, then also the affirmation of something of several individuals is made with reference to a single identical predicate This single thing, however, which is denied or affirmed of a multiplicity is something apart from that which is in the sensibles, and this is the idea According to Alexander, Aristotle maintains that this argument makes ideas not only of affirmative but also of negative predicates.

The demonstration which Aristotle calls τὸ νοεῖν τι φθαρέντος Alexander (pp 81, 25-82, 1) calls simply ὁ λόγος ὁ ἀπὸ τοῦ νοεῖν (cf. Asclepius ἀπὸ τοῦ νοεῖν τι [*Metaph.*, p. 75, 2]); the argument is that, if, when we have in mind "man," or "land-going," or "animal," we are thinking something existent but none of the particular existents (for even if these particulars be destroyed the same concept persists), it is clear that what we think irrespective of the existence or non-existence of the particular sensibles exists apart from them, for it is not something non-existent that we are thinking. This is an idea.

This argument, Alexander represents Aristotle as saying (p 82, 1-7), establishes ideas of all sensible and individual objects, of Socrates and Plato, for example, for we think them and retain an impression of them too even when they no longer exist. Furthermore, we do the same with things that are absolutely non-existent, such as the Hippocentaur and Chimaera. Consequently, the existence of ideas is not established by such an argument either.

Alexander's comment on the next sentence, *Metaphysics* 990 B 15-17, follows the same pattern as did that on lines 11-15; that is to say, he takes Aristotle to mean that there was a special demonstration which established ideas of relations and another which introduced "the third man", and these special demonstrations he explains and criticizes.

The demonstration which establishes ideas of relations[188]

[188] Robin (*Idées et Nombres*, p. 19) says that Alexander calls it the argument

runs as follows (pp. 82, 11-83, 17). There are three possible ways in which an identical predicate may belong to several subjects. 1) the several subjects may each be properly and exactly that which the predicate signifies, 2) they may all be likenesses of things which truly are that signified by the predicate; 3) one of them may be the model and the rest likenesses of it. Now when we predicate equality of phenomenal objects, it is not the first condition which obtains, for the same formula does not fit all of them nor do we indicate by the predication things that are truly equal, since the quantity in sensibles is constantly shifting and altering and is not determinate and no phenomenal object admits exactly the formula of equality On the other hand, the third condition is not the basis of our predication either, for no one of these objects is more a likeness or model than any other. This leaves the second condition as the only possible explanation: *all* the subjects of our predication are likenesses; and the phenomenal equals are equals *qua* likenesses of equality in the true and proper sense. If this is so, there must exist an " absolute equality " in reference to which the phenomena, as likenesses, get the attribute " equal." [137]

ἐκ τῶν πρός τι The reading of A at p 82, 11 is *ὁ μὲν ἐκ τῶν πρός τι κατασκευάζων ἰδέαν* λόγος but L and F have *καί* instead of *ἐκ* here; and *ἐκ τῶν πρός τι* occurs nowhere else, while at p 83, 17 we have without recorded variants λόγος *ὁ καὶ τῶν πρός τι κατασκευάζων ἰδέας*

[137] Alexander's account of this argument has troubled interpreters (cf. Bonitz, *Metaphysica*, p 111; Robin, *Idées et Nombres*, p 603) at least since the time of the author of the version which appears in L and F (*cf* Hayduck, *Praef* to Alexander, *Metaph*, p IX, n 2) There the argument is recast as follows — Several subjects may have a single predicate *ὁμωνύμως ἢ συνωνύμως*, and synonymous predication may be either *κυρίως* or *οὐ κυρίως* Condition 1, as given by Alexander, is an example of *συνωνύμως κυρίως*, condition 2 of *συνωνύμως οὐ κυρίως*, condition 3 of *ὁμωνύμως*. Equality predicated of sensibles can be neither *συνωνύμως καὶ κυρίως* nor *ὁμωνύμως*; therefore, it must be *συνωνύμως οὐ κυρίως δέ* At any rate, " equality itself " is not predicated *κυρίως* of sensible equals but of something apart from them of which they are likenesses, and this other thing is the idea

This version Robin has attempted to combine with the other in his analysis of the argument (*op cit.*, pp 20-21, 603-604, 607 *ad fin.*); as a result he calls condition 2 a type of synonymity in one place (p. 20, cf also p. 607) and a kind of homonymity in another (p 21, cf. the question mark after *συνωνύμως* in his text of LF, p. 604). The fact is that LF calls the predication in question a kind of *synonymity*, whereas Alexander says: *κατηγοροῦμεν δὲ τῶν ἐνταῦθα τὸ*

This demonstration is according to Alexander (p 83, 17-22) more accurate and appropriate than those previously mentioned

ἴσον αὐτὸ ὁμωνύμως αὐτῶν κατηγοροὐμενον (p 83, 6-7) What Alexander calls *ὁμωνύμως* LF makes *συνωνύμως οὐ κυρίως δέ*, although there is no warrant in Alexander's account for two kinds of synonymity There is a difficulty in Alexander's account, however, which offers a clue to the motives for the changes in LF and therewith an explanation of the tangle which those changes were meant to eliminate The beginning of Alexander's account (*ἐφ' ὧν ταὐτόν τι πλειόνων κατηγορεῖται μὴ ὁμωνύμως ἀλλ' ὡς μίαν τινὰ δηλοῦν φύσιν ἤτοι . ἢ ἢ . .) is changed* in LF to *ὧν κατὰ πλειόνων τι κατηγορεῖται ἢ ὁμωνύμως ἢ συνωνύμως κατηγορεῖται καὶ εἰ συνωνύμως, ἢ κυρίως . ἢ οὐ κυρίως ἢ ὁμωνύμως* Now Alexander's *μὴ ὁμωνύμως ἀλλ' ὡς μίαν τινὰ δηλοῦν φύσιν* is clearly meant to cover condition 2 as well as condition 1 (cf p 83, 3 4) and apparently means "synonymously", the author of LF, therefore, took these two conditions to exemplify two types of synonymity Yet Alexander then says that the predication of equality in the *case of phenomena is ὁμωνύμως, and he supports this statement by showing that* condition 1 does not apply (p 83, 7-11) Conditions 2 and 3 remaining, the latter is then shown to be inapplicable, because none of the sensible equals is a *παράδειγμα* of the others (p 83, 11 12) It is condition 2, then, which is left as the predication *ὁμωνύμως* in question This, however, seems to contradict the first sentence, it is therefore eliminated by LF Condition 2 is, however, *ὁμωνύμως* in the Platonic sense (i e as having the common name and nature derivatively, cf *Phaedo* 78 D E [cf 102 B], *Parmenides* 133 D [cf 132 D], *Timaeus* 52 A [cf *Sophist* 234 B]), even though it may be called *οὐχ ὁμωνύμως* in the Aristotelian sense (all the portraits alike as *εἰκόνες ἀνθρώπων* having the same nature, cf p 83, 3-4), certainly *ὁμωνύμως* is not used in the same sense in the two passages, so that Alexander must be using Aristotelian terminology in the first and Platonic in the second (cf Alexander, *Metaph*, pp 51, 11-13, 77, 12-13; see notes 102 and 115 *supra*) This is intelligible if the first sentence of the comment is a summary in his own language whereas in the succeeding argument he followed more closely the wording of his source (the *περὶ ἰδεῶν*) The presence of *ὁμώνυμον* in the Platonic sense is certain evidence that some *such text as the περὶ ἰδεῶν was before him, the inaccurate expression of the first* sentence marks it as a careless summary, for from the construction of the sentence alone it would appear that *all three* conditions are *οὐχ ὁμωνύμως* As LF drops the sentence at p 83, 6-7, in which the Platonic use of *ὁμωνύμως* appears, so it drops that at p 83, 12-14 in which the same word is used; it is clear that this interpreter was unable to understand the word in these passages and so eliminated them in order to achieve consistent Aristotelian usage After having ruled out condition 3 Alexander proceeds *εἰ δὲ καὶ δέξαιτό τις μὴ ὁμώνυμον εἶναι τὴν εἰκόνα τῷ παραδείγματι, δεῖ ἕπεται ταῦτα τὰ ἴσα ὡς εἰκόνας εἶναι ἴσα τοῦ κυρίως καὶ ἀληθῶς ἴσου* This is an essential step in the argument, for it establishes the thesis that the phenomenal equals necessarily imply an absolute equality other than the phenomena As to the meaning of the *μὴ ὁμώνυμον* here, it would be unlikely that Alexander used it in the Aristotelian sense in the midst of the

because, unlike them, it does not undertake to show merely that the common predicate is something other than the particulars but that there is of the objects in the sensible world a model (*παράδειγμα*) which exists in the full and proper sense of the word, this being the distinguishing feature of the ideas.

That, however, as Aristotle says, it establishes ideas of relative terms also is clear from the account of it just given in which the conclusion was established in the case of equality, itself a relative term. Yet, inasmuch as for the Platonists the ideas, being definite substances, are self-subsistent whereas the existence of relatives consists in reciprocal relationship, the Pla-

argument, after having used *ὁμωνύμως* in the Platonic sense seven lines above, but, besides that improbability, it would not follow from the admission that image and model are "not homonymous" in the Aristotelian sense (i.e. that they are synonymous) that phenomenal equals imply absolute equality, and, finally, the protasis, *εἰ δὲ . . παραδείγματι*, seems to refer to the conclusion from the previous sentence which did not prove that image and model are synonymous but that no phenomenal equal is an image of another phenomenal equal. With the Platonic sense, however, for *μὴ ὁμώνυμον* the sentence would have to mean: If one admits that the image is not of the same class as the model (i.e. if one rejects condition 3 which was refuted in the previous sentence [for this use of *ὁμώνυμον* cf. *Phaedrus* 266 A, *Philebus* 57 B, and note 102 *supra*]), then the phenomenal equals (already shown to be "likenesses" by the elimination of condition 1) must be likenesses of an equality which does not exist as one of their own class, i.e. of an absolute equality, and in that case there exists "equality itself." This interpretation may be supported by Plato's remark concerning the *εἰκών* that *οὐδ' αὐτὸ τοῦτο ἐφ' ᾧ γέγονεν ἑαυτῆς ἐστιν, ἑτέρου δέ τινος ἀεὶ φέρεται φάντασμα* (*Timaeus* 52 C) and the definition of *εἴδωλον* or *τὸ ἐοικός* as *τὸ πρὸς τἀληθινὸν ἀφωμοιωμένον ἕτερον τοιοῦτον* (*Sophist* 240 A). Nevertheless, Plato's tendency to call the phenomena *ὁμώνυμα τοῖς εἴδεσι* (*Timaeus* 52 A, *Parmenides* 133 D, *Phaedo* 78 E) suggests that the true reading may have been *ὁμώνυμον τὴν εἰκόνα τῷ παραδείγματι* and that the *μὴ* was inserted by a reader who, taking the word in the Aristotelian sense, tried to correct the passage in the manner of LF. In that case *εἰ . . . παραδείγματι* would mean: "and if one would also admit that the image always is derivative from the model, . . ." (with comma after, instead of before, *del* in line 13). That the passage may have been tampered with is rendered more likely by the fact that the idea is called *παράδειγμα καὶ εἰκών* (p. 83, 16). Such a use of *εἰκών* is unparalleled in Alexander but occurs in [Alexander], *Metaph.*, pp. 771, 24-772, 10 (cf. also Timaeus Locrus, 99 D, Plutarch, *Quaest. Conviv.*, 718 F, Lucian, *Vitarum Auctio*, § 18 [see H. Willms, EIKΩN pp. 25 ff.]), it could have been suggested by the misinterpretation of *παράδειγμα ἢ εἰκών* at p. 83, 12 above.

tonists did in effect and by implication deny ideas of relatives Furthermore, if that which is equal is equal to something which is equal to it, there would have to be more than one idea of the equal, since if the absolute equal were equal to nothing it would not be equal at all. Finally, this argument would require ideas of unequals, too, for there must be in the same fashion ideas of both opposing terms or of neither and the Platonists admit that inequality is an attribute of a multiplicity of subjects (p 83, 22-30).

Alexander then proceeds to the reference concerning the τρίτος ἄνθρωπος, which he explains by giving first the demonstration that "introduces the third man" (pp. 83, 34-84, 2)·—The Platonists say that the common predicates of substances are properly what such predications signify of their subjects and that they are ideas; furthermore they say that things which are similar to one another are so by participation in some identical thing which is essentially that element of similarity, and this is the idea [188] Hereupon there follows an exposition of four types of the "third man" argument, the last of which, Alexander says (*Metaph.*, p. 85, 9-12), Aristotle used in the περὶ ἰδεῶν and ἐν τούτῳ μετ' ὀλίγον, by which he means *Metaphysics* 991 A 2-3 (cf. Alexander, *Metaph.*, p 93, 5-7), the first of which was employed by Eudemus, among others, in his book περὶ λέξεως. This first form (that used by Eudemus) states that, if the common predicate, not being identical with any of the things of which it is predicated, is something else apart from the subjects (since "absolute man" is made a genus for this reason, because it is identical with none of the particulars of which it is predicated), there must be a "third man" apart from the particular man and the idea which is itself a single individual (p. 84, 2-7). The form of the argument ascribed to Aristotle runs as follows (pp. 84, 21-85, 3):—If what is truly predicated of a number of things also exists as something

[188] These two sentences (pp 83, 34-84, 2) give the Platonic argument from which Eudemus and Aristotle develop their refutations, but the passage is not to be taken as an integral part of the argument of Eudemus which follows it, for the Platonic hypothesis from which the "third man" follows is stated as a protasis again in the arguments of Eudemus (p. 84, 2-5) and Aristotle (p 84, 22-27). Cf also p 85, 3-5 and Robin, *Idées et Nombres*, note 51[7] (p 611).

other than these subjects and separate from them (as those who posit ideas believe that they demonstrate when they say that "absolute man" is an existing thing because "man" is truly predicated of the multiplicity of particular men and is other than the particular men),—if this is so, there must be a "third man," for, if the predicate is other than its subjects and has independent subsistence and "man" is predicated both of the particulars and of the idea, there must be a third man apart from these. In like fashion there must be a fourth which is predicated of this third, of the idea, and of the particulars; and so on indefinitely. Alexander himself notes (p. 85, 3-5) that the latter form of the argument is the same as the first, inasmuch as both take as their starting point the doctrine that similar things are similar by participation in a single identical thing and proceed by pointing out that the men and the ideas are similar. He does not mention that in the form ascribed to Aristotle there is the explicit charge of an infinite regress which is lacking in the first form as here stated (see note 194 *infra* [end]).[130]

None of these arguments to establish the existence of the ideas occurs in the Platonic dialogues in the form in which they are here reported by Alexander, and, even if it be admitted that his account of them is a substantially exact representation of the περὶ ἰδεῶν, allowance must be made for the possibility that the way in which they were there stated was due to Aristotle's penchant for casting into syllogistic form the more loosely worded Platonic arguments (cf. Aristotle, *frag.* 45 and Jaeger, *Aristoteles*, pp. 41, 44-45). It is possible, however, to find in Plato's own writings arguments which could easily have been developed into these demonstrations, whether such developments were the work of Plato himself or of one or another of his students in the Academy. It will, therefore, be well to consider the demonstrations one by one, such evidence as there is for them in the writings of Plato and in other parts of the Aristotelian corpus, their probable meaning for the Platonists, the way in which Aristotle uses them in his refutation, and the validity of the criticisms of them reported by Alexander and indicated elsewhere by Aristotle.

[130] See Appendix IV.

A. "The Arguments from the Sciences"

The three forms of the demonstration "from the sciences" (which Alexander implies [*Metaph.*, p 79, 3-5] were not the only forms mentioned in the περὶ ἰδεῶν [see note 144 *infra*]) differ only in the stress laid upon one or another of the characteristics proper to the objects of knowledge. The first proceeds from the premise that every ἐπιστήμη functions by reference to some one identical object, the third from the premise that knowledge refers not to a particular example of the object but to the object without qualification.[140] The second form (p. 79, 8-11) is more consequent than either of these two and, in fact, includes them; it first states the existence of the objects of knowledge, then that these entities are other than the particulars, and this is supported by the consideration that the particulars are ἄπειρά τε καὶ ἀόριστα whereas knowledge is of ὡρισμένα. The identity and universality of the object of knowledge are implied in the more general characteristic of "definiteness." All the several elements used in this demonstration are to be found in the Platonic dialogues,[141] and the validity of

[140] The MSS of Alexander L and F so state these two arguments that the third explains the first and the first the third a science has a single identical correlate, for it refers not to particulars but to the universal, a science is not of particulars because it functions by referring particulars to the universal

[141] Plato commonly begins an inquiry by laying it down that the object of thought or knowledge exists (e g *Phaedo* 65 D [φαμέν τι εἶναι δίκαιον αὐτὸ ἢ οὐδέν;], 74 A, *Republic* 476 E [ὁ γιγνώσκων γιγνώσκει τι ἢ οὐδέν, ἀποκρινοῦμαι, ἔφη, ὅτι γιγνώσκει τί πότερον ὂν ἢ οὐκ ὄν, ὄν]) and sometimes proceeds to assert directly the connection of existence and intelligibility (*Republic* 477 A-B [continuation of the passage cited above, cf Shorey, *Republic*, I, p 522, note *a*], cf *Timaeus* 27 D-28 A, 29 B-C) The unalterable identity of the object of any ἐπιστήμη is implied in the statement of the *Laches* (198 D-199 B) that the object of any science is the same at all times (cf *Republic* 339 A), in *Republic* 478 E-480 A it is argued that the phenomenal multiplicities cannot be objects of knowledge just because, being never fixed and unchanging, they do not exist εἰλικρινῶς. The *Cratylus* states that, if τὸ γιγνῶσκον and τὸ γιγνωσκόμενον exist, they cannot resemble flux and change (440 B 4-C 1), for what is in flux is unintelligible (439 E 7-440 A 4), whereas whatever is "just what it is," so long as it is that, is unchanging (439 D 5-6, 439 E 3-5, cf for the identity of the object of thought *Phaedo* 74 C 1-5, *Theaetetus* 195 D 6-E 7); and this instability is the reason given in *Philebus* 59 A-C for denying that the objects of true ἐπιστήμη can be sensible phenomena, these are never κατὰ ταὐτά, and the objects of real

these elements themselves as well as the *partial* validity of the conclusion is accepted by Aristotle. According to the refutation reported by Alexander (p. 79, 15-19) it is admitted that these arguments demonstrate the existence of τινα παρὰ τὰ καθ' ἕκαστα καὶ αἰσθητά; the only objection is that the entities so established need not be ideas, since there are besides the particulars the common predicates ὃν φαμεν καὶ τὰς ἐπιστήμας εἶναι. The genuinely Aristotelian character of this criticism is vouched for by the fact that, when Aristotle argues from the possibility of demonstration to the existence of the universal, he is careful to insist at the same time that this is not an argument for the existence of Platonic ideas (*Anal. Post.* 77 A 5-9, see pages 71-72 and note 56 *supra*). That knowledge is of the universal only is a constantly recurring Aristotelian dictum (*Metaphysics* 1003 A 13-15, 1060 B 19-21, 1086 B 5-6 and 32-37, *De Anima* 417 B 22-23,

knowledge are τὰ ἀεὶ κατὰ τὰ αὐτὰ ὡσαύτως ἀμεικτότατα ἔχοντα. It is in the refutation of "conceptualism" in *Parmenides* 132 B C that we find the clearest argument from the existence of the concept in the mind to the necessary existence of an objective correlate which is ever one and the same. In the *Theaetetus*, on the other hand, where there occurs the most elaborate argument to prove that knowledge is not sensation, Plato does not explicitly draw the expected conclusion that the objects of knowledge are the ideas, although it is clear enough that this was even here his own solution of the problem (cf Cornford, *Plato's Theory of Knowledge*, pp 105-106, 108-109; Grube, *Plato's Thought*, pp 36-38). At any rate, *Theaetetus* 185-186 argues that the objects of ἐπιστήμη are not sensibles or mediated to the soul by the senses but that the soul *by itself* attains the οὐσία and ἀλήθεια of them. W F R Hardie (*A Study in Plato*, p 22) appears to believe that Plato is here "primarily concerned to insist on connexion between what is sensible and what is intelligible", but this view seems to be due to a mistaken notion about the κοινά, of which Hardie says "They are 'common' in the sense that they may be found in connexion with the objects of any of the special senses". That is surely not Plato's point here, for these κοινά are not mediated to the soul by the senses (185 C-D, 186 E 4-6, 187 A 3-6) and the true nature even of "what is perceived" is itself not known by perception at all but by the mind alone (cf Shorey, *Unity*, p 34; *Republic* 523 E-524 C). That the confused reports of sensation may *stimulate* thought obviously does not mean that the objects of thought are the sensibles! Cornford is clearly right, then, when he says (*op. cit.*, p 105) that the κοινά "are, in fact, the meanings of common names—what Plato calls 'Forms' or 'Ideas'" (cf. the use of κοινόν in *Theaetetus* 208 D 7-9, 209 A 10-11; note the use of τὰ κοινά in the refutation reported by Alexander [*Metaph.*, p. 79, 17-19] and Aristotle's criticism of the idea as κοινόν, note 121 *supra*).

Eth. Nic. 1140 B 31-32, 1180 B 15-16); but it is significant that the elements used in the arguments "from the sciences" are most explicitly stated in the thesis of the problem as to whether there exists anything besides the particulars (see note 131 *supra*): if there is no such thing but only the unlimited particulars, there can be no knowledge of these objects,[142] for all things are known in so far as they are one and the same, in so far as they have an universal predicate (*Metaphysics* 999 A 26-29, cf. 999 B 26-27· *καὶ τὸ ἐπίστασθαι πῶς ἔσται εἰ μή τι ἔσται ἓν ἐπὶ πάντων;*).[143] So, if there is nothing besides the particulars,

[142] Cf. *Rhetoric* 1356 B 31-32· *τὸ καθ' ἕκαστον ἄπειρον καὶ οὐκ ἐπιστητόν.* The context in which this sentence occurs is analogous to the third form of the argument "from the sciences" *οὐδεμία τέχνη σκοπεῖ τὸ καθ' ἕκαστον, οἷον ἡ ἰατρικὴ τί Σωκράτει τὸ ὑγιεινόν ἐστιν ἢ Καλλίᾳ, ἀλλὰ τί τῷ τοιῷδε ἢ τοῖς τοιοῖσδε* (1356 B 28-31) Since, however, the object of activity is always the particular, although the object of knowledge is always the universal, theoretical knowledge and successful practice do not necessarily coincide, and in all practical fields experience of particulars cannot be replaced by knowledge of the universal (*Eth Nic.* 1141 B 14-23, 1180 B 7-23, *Metaphysics* 981 A 7-27) This distinction Aristotle uses as an argument against the theory of ideas by contending that knowledge of the idea would in any case be useless, for the physician, since he heals a particular man, does not consider health universally but the health of man or, rather, the particular health of his patient (*Eth. Nic.* 1097 A 11-14). This argument is, however, an equivocation, for the practitioner who heals successfully without knowledge Aristotle himself would refuse to call a *τεχνίτης* or *ἐπιστήμων*, so that it is simply a question of whether the name *ἰατρός* should be applied in virtue of empirical success, which without knowledge is in fact "accidental," or in virtue of the possession of the *τέχνη*. The real distinction between Aristotle's doctrine and Plato's here lies in the fact that according to the former the universal is a *κοινόν* which, being immanent in the particulars, can be "abstracted" from them, so that knowledge can be treated as a derivation from experience; this doctrine, in turn, necessitates a minimizing of the distinction between sensation and knowledge in such a way that, although the object of sensation is a particular, its content is a universal (cf *Metaphysics* 980 A 27-981 A 12, *Anal Post* 100 A 16-B 1, *De Anima* 432 A 1-8, 424 A 17-24; Hamelin, *Le Système d'Aristote*, pp 384-5, Werner, *Aristote et l'Idéalisme Platonicien*, pp 67-9)

[143] The argument from the single identity of the object of knowledge to the necessity of objects other than particulars is reminiscent of the first form of the argument "from the sciences." Aristotle elsewhere uses a reversal of this very argument against the assumption of certain ideas Since the idea was posited because each *ἐπιστήμη* must have a single object, he contends that of a single idea and all the things that are *κατὰ μίαν ἰδέαν* there must be a single science, so that, if there is an idea of good, there should be one science of all "goods."

nothing would be intelligible and there would be no knowledge of anything,—unless one were to call sensation knowledge (999

(For Aristotle's form of the doctrine, "one science—one object," cf. *Anal. Post.* 87 A 38-B 4, *Metaphysics* 1055 A 31 32, 1003 B 19-21.) In this case, however, there are many sciences even of the "goods" in a single category: for example, of the good in the category of time (καιρός) strategy is the science in certain cases, medicine in others, of the quantitative good (μέτριον) in some cases medicine, in others gymnastic is the science (*Eth. Nic* 1096 A 29-34, cf *Eth. Eud* 1217 B 34 1218 A 1) Now in the *Laches* the principle of one science for one object is used to show that if "courage" is the science of future goods it is ἡ περὶ πάντων ἀγαθῶν τε καὶ κακῶν καὶ πάντως ἐχόντων ἐπιστήμη (198 D-199 E) In the face of the fact that the knowledge of τὸ ὑγιεινόν has just been assigned to ἰατρική and the knowledge of τὰ περὶ τὸν πολεμόν to στρατηγία (198 D-E) Plato can still speak of *all* good as the object of a single ἐπιστήμη, in short, he sees no difficulty in what Aristotle states as a fatal contradiction and a refutation of the notion of an idea of good. The reason is not far to seek; Aristotle's contention that "the goods" are the objects not of one but of many special sciences is simply the argument of Laches which Nicias has repulsed by pointing out that the special sciences do *not* any of them have the good as their object (*Laches* 195 B-196 A, cf *Charmides* 174 C-D, Shorey, *Unity*, note 97, Taylor, *Plato*, p 63) This same Platonic argument is used in the *Magna Moralia* to prove that ethics (ἡ πολιτική) is not concerned with τὸ ἀγαθὸν τὸ κοινόν, for no science passes judgment on whether or not its own τέλος is good and ethics is a special science like any other (1182 B 22-31). It is from this point of view that the *Magna Moralia* then employs the argument that the good existing in the various categories and even the various goods in the same category are the objects of different special sciences (1183 A 7-24), the conclusion here stressed, however, is not that there is no idea of good because there is no single science of the good but rather that, since it is the part of no single science or faculty to investigate concerning all good, ethics is not concerned with τὸ κοινὸν ἀγαθόν either The possible answer of the Platonists, that in discussing the good one should consider it in the absolute sense which is in fact the idea of good,—this argument is not refuted but is dismissed as irrelevant on the ground once more that ethics as a special science does not judge its own τέλος and is consequently concerned only with τὸ ἡμῖν ἀγαθόν (1183 A 28-37). Here the possibility of a single science of the good and therewith a single absolute good is not denied; the author's attitude is simply that this question has no bearing on his subject (against von Arnim's mistaken attempt to take this as acceptance of the theory of ideas cf Walzer, *Magna Moralia und aristotelische Ethik*, pp. 262-269) The *Eudemian Ethics*, on the other hand, like the *Nicomachean* uses the argument from ἐπιστήμη to disprove the existence of an idea of good but goes beyond the *Nicomachean* by explicitly denying at the same time the existence of a single science of being (1217 B 34-35) Although this is no more than the logical conclusion from the statement, τἀγαθὸν ἰσαχῶς λέγεται τῷ ὄντι, and the argument based on it (*Eth. Nic.* 1096 A 23-29, *Eth. Eud.* 1217 B 25-34), Aristotle does

B 1-3 [*Theaetetus* 151 E], cf *Timaeus* 51 B-E and *Metaphysics* 1039 B 27-1040 A 2). To the extent, then, that the arguments from the sciences prove the existence of the universal as other than the particular sensibles Aristotle is in accord with the Platonists; when he contends that this, however, does not prove the existence of ideas, his criticism rests upon something outside of the argument, namely upon his own assumption that the mind can somehow elicit from the sensible particulars the universal which is neither identical with any such datum nor separately existing in experience (cf. *Anal. Post.* 87 B 28-88 A 17, 90 A 24-30, see pages 71-80 *supra*).

It is not this objection, however, which in the *Metaphysics* is urged against the conclusion drawn from the "arguments from the sciences" but the more puzzling one that these arguments would require ideas of all things of which there are ἐπιστῆμαι, a conclusion which, it is implied, is in contradiction with the Platonic theory itself. What, then, are the objects of which, though there is knowledge, there are no ideas? Restricting ourselves to the text of Aristotle for the moment, we find a little lower on the same page (990 B 22-29 = 1079 A 19-26) a passage in which it is argued that "according to the conception on which we say that the ideas exist" there should be ideas not only of substances but of many other things also; and this contention he establishes by pointing out that the concept is a unit in the case of non-substances too and that there are ἐπιστῆμαι of other things as well as substances.[144] On the

not draw it in the *Nicomachean Ethics*, nor could he, for it flatly contradicts his constant and settled doctrine that there *is* somehow a single science of "being" (cf. *Metaphysics* 1003 A 21-32, 1026 A 23-32, 1060 B 31-1061 B 17, 1064 B 6-14) This passage of the *Eudemian Ethics* requires some explanation, which—so far as I can find—it has not received, from those scholars who treat that work as genuine and as a product of that stage in Aristotle's thought at which he sought to deduce ethics from a metaphysical science of "being" (cf. Jaeger, *Aristoteles*, pp 246-7, 249, and 268, n 1, see also note 269 *infra*) As for the argument against a single science of the good, Aristotle himself contends that all the πρακτὰ ἀγαθά, at least, are somehow dependent upon a single τέλος and fall under the scope of a single science which is ἡ πολιτικὴ (*Eth. Nic.* 1094 A 18-B 11, 1097 A 15-B 21), and even in the midst of his criticism of the unity which is the idea of good he admits that "good" is not merely an homonymous term (1096 B 26-31, see pages 359 364 *infra*)

[144] Alexander, in his commentary on this passage (*Metaph.*, pp 88, 5-89, 7),

other hand, he says, according to logical cogency and the opinions which are held of the ideas there must be ideas of substances *only*, a statement which he tries to support by developing the implications of the theory of participation (990 B 29-991 A 2 = 1079 A 26-33). From this comparison it might appear that in the earlier passage too Aristotle's argument is that, whereas according to the "arguments from the sciences" there should be ideas of non-substances as well as of substances, the theory itself will not allow for ideas of what are not οὐσίαι in his own sense. The problem to be resolved, then, would be simply whether or not the Platonists did restrict the ideas to those of substances

According to the commentary of Alexander, however, Aristotle means rather to point out that the arguments from the sciences, if valid, require the assumption of ideas of artefacts, for which the Platonists, nevertheless, do not desire to assume

refers τὸ νόημα ἓν to an argument which he calls ὁ ἀπὸ τοῦ νοεῖσθαί τι κοινὸν ἐπὶ πλείοσιν with which he combines the essentials of that called κατὰ νοεῖν τι φθαρέντος (p 88, 7-9), the statement concerning knowledge of other things than substances he refers to the arguments ἐκ τῶν ἐπιστημῶν, explaining that there is knowledge in the case of qualities, quantities, etc and adding that the virtues, of which there are presumably ideas, are themselves not substances (p 88, 9-14) As a commentary on Aristotle's remark καὶ ἄλλα δὲ μυρία συμβαίνει τοιαῦτα (990 B 27 = 1079 A 23 24) he says that there are some other arguments to establish the ideas and that these also imply ideas of other things besides substances (p 88, 14-17) Of these "other arguments" he gives three. The first, however, is just the ἓν ἐπὶ πολλῶν once more (p. 88, 17-20) The second is the argument that things which come to be in a regular order must come to be in relation to some established model, and this is the idea (pp 88, 20-89, 2, cf "Alcinous" [i e Albinus], *Didaskalikos*, chap IX [p 163, Hermann] πᾶν τὸ γιγνόμενον κατ ἐπίνοιαν πρός τι ὀφείλει γίνεσθαι, οὗ ὥσπερ εἰ ἀπό τινός τι γένοιτο, ὡς ἀπ' ἐμοῦ ἡ ἐμὴ εἰκών, δεῖ τὸ παράδειγμα προϋποκεῖσθαι N b the reversal of the argument against the ideas, Alexander, *Metaph*, p 86, 16-20, see note 191 *infra*) The third proceeds from the premise that whatever we truly assert must exist, since we say that there are five or three concords and three modes but of the sensible concords and modes the number is unlimited, our true assertion must relate to some other eternal entities (p 89, 2-7) This is simply a special application of the second form of the argument from the sciences These arguments Robin believes (*Idées et Nombres*, note 19 [p 24]) to have been taken from the περὶ ἰδεῶν, this seems probable (cf p. 89, 6-7 and p. 79, 3-5), but, in any case,—with the exception of the second argument above—the passage presents nothing really new.

ideas (*Metaph.*, pp. 79, 19-80, 6) This interpretation commands particular attention, since its source is pretty certainly the *περὶ ἰδεῶν*; [146] but, although it shows that in that work Aristotle argued on the assumption that ideas of artefacts were not admitted, it does not indicate whether this was taken to be the doctrine of all Platonists, Plato included, or of one party of the Academy only. Nor do the extant writings of Aristotle furnish definite and unambiguous evidence on this point. Aristotle himself, when considering the problem of form, takes it for granted that in the case of manufactured objects there can be no form existing separate from the particular artefacts [146] More-

[148] Philippson (*Riv di Filologia*, LXIV [1936], p 123) argues that, although *Metaphysics* 990 B 8 991 B 9 is in great part taken from the *περὶ ἰδεῶν*, the refutations which assume that there *ought not* be ideas of negative terms, relative terms, and artefacts cannot have come from this work because such ideas *are* assumed throughout the writings of Plato who "only in his last years and in his lectures" limited the ideas to those of natural objects In this, however, Philippson merely assumes what he has set out to prove, namely that the *περὶ ἰδεῶν* was written before this limitation was made (specifically, before Plato's *Parmenides*) Philippson's other arguments in support of his thesis aside (cf Siebeck's similar notion that the *Parmenides* is an answer to Aristotle [*Zeitschrift für Philos u philos Kritik*, 1896, pp 1 ff] and, on an analogous construction of Eberz, Diès, *Autour de Platon*, pp 337-343), it is in connection with the arguments *ἐκ τῶν ἐπιστημῶν* that Alexander makes specific reference to the *περὶ ἰδεῶν* and it is impossible to separate as from different sources his account of the charge that the demonstrations are inconclusive and that of the argument that they would in any case prove too much Philippson himself contends (*op cit*, p 121) that the arguments *and the refutation* which Alexander here gives derive from the *περὶ ἰδεῶν*, there is no reason, save the thesis of Philippson itself, for limiting this contention to the first part of the refutation (n b *Metaph*, p 79, 15-20 . . *ἀλλὰ δεικνύουσι τὸ εἶναι τινα κτλ* . *ἔτι τε τὸ καὶ τῶν ὑπὸ τὰς τέχνας ἰδέας εἶναι*). See note 173 *infra*

[146] In *Metaphysics* 999 B 17-20, in putting the problem as to whether there is a form apart from the composite substance, he says that, if there is, it is difficult to decide in what cases this will be true (cf 995 B 34 36), since it obviously is not possible in all cases *οὐ γὰρ ἂν θείημεν εἶναί τινα οἰκίαν παρὰ τὰς τινὰς οἰκίας* (The first person plural here [*θείημεν*] is no indication of the Platonic attitude [see Appendix II]) The same assumption is made in the repetition of the problem at 1060 B 23 28 where "house" is again the example used (for 1060 A 13-18 see note 148 *infra*); and at 1043 B 18-21, where it is said not yet to be clear whether the substance of perishables is separate, Aristotle adds that this is clearly impossible in the case of things that cannot exist apart from the particular instances, *οἷον οἰκίαν ἢ σκεῦος*.

over, one type of attack upon the ideas consists in the argument that, since artefacts come into being without the existence of ideas to account for their production, there is no reason to believe the existence of ideas necessary for the generation and existence of other things,—an argument which implies that those against whom it is used would at least *admit* the statement concerning artefacts.[147] Yet there are a few passages which indicate that those who posited ideas posited them for *every* class of individual things or that Aristotle was not sure of any class that might have been excluded; the doctrine that *all sensibles* exist by participation in ideas is ascribed to Plato by name, and by direct implication he is charged with the conclusion that there exist ideas of all things spoken of universally.[148]

[147] *Metaphysics* 991 B 6-7 = 1080 A 5-6 πολλὰ γίγνεται ἕτερα, οἷον οἰκία καὶ δακτύλιος, ὧν οὔ φαμεν εἶδη εἶναι (A = M ὧν οὐ φασιν εἶναι εἴδη) *Metaphysics* 1084 A 27-29: ἔτι δὲ καὶ ἔστι καὶ γίγνεται ἔνια καὶ ὧν εἴδη οὐκ ἔστιν, ὥστε διὰ τί οὐ κἀκείνων εἴδη ἔστιν; οὐκ ἄρα αἴτια τὰ εἴδη ἐστίν This last occurs in the midst of a passage in which Aristotle is criticizing the identification of ideas and numbers and the concomitant limitation of the series of numbers to the decad (see note 148 *infra* on 1073 A 14-22) Bonitz (*Metaphysica*, p 558), considering 1084 A 27-29 to be a criticism not of idea numbers but of ideas in general as causes of sensibles, thought it an intrusion from some such place as M, chap 5 As Ross says, however, εἴδη alone can in this section mean idea-numbers (cf 1084 A 13) If the passage is to stand, it must mean this and not ideas as such; but in that case ἔτι δὲ καὶ ἔστι . ὧν εἴδη οὐκ ἔστιν does not refer to the supposed admission that there are no ideas of artefacts (991 B 6-7 = 1080 A 5-6) but to Aristotle's deduction at the beginning of this section that there must be things of which there are no idea-numbers because, if number be limited to the decad, the ideas will fall short even of the various forms of animals (1084 A 12-17)

Physics 193 B 35-194 A 7, which has been cited as evidence of the Platonic restriction of ideas to "natural objects" (Robin, *Idées et Nombres*, note 97 [p 90]), tells nothing either way The statement there that those who posit ideas τὰ φυσικὰ χωρίζουσιν does not imply that they separate *only* τὰ φυσικά. Aristotle's purpose is to contrast φυσικά and μαθηματικά and to argue that the former cannot even in thought be separated as the latter can (see pages 203-204 *supra*)

[148] In *Metaphysics* 1060 A 13 18 the problem arises as to the existence of separate form, and Aristotle asks παρὰ ποίας τῶν αἰσθητῶν it is necessary to posit such a substance if one is going to posit it at all What reason could there be, he asks, to posit it in the case of men and horses any more than in the case of other animate beings or even of inanimate things without restriction (καὶ τῶν ἀψύχων ὅλως)? Then he adds that it would seem unreasonable to set up eternal substances equal in number to the perishable sensibles This must mean

In one passage, however, his name is connected with the limitation of the ideas, and this passage is the crux of the whole problem (*Metaphysics* 1070 A 9-21). Aristotle is there speaking of his three οὐσίαι,—matter, form, and the composite individual. In some cases, he says, the form has no existence apart from the composite substance: for example, the form of a house does not exist apart, except in the sense that the art is the form (cf. 1070

separate substances answering to *all* sensibles whether artefacts or not, but there is no indication here that such a course seemed unreasonable to the Platonists On the contrary, this is the very procedure which is elsewhere charged against those who posited the ideas, and those, moreover, who first did so under the influence of the Socratic method (*Metaphysics* 990 A 34-B 8, 1078 B 31-1079 A 4 [ὥστε συνέβαινεν αὐτοῖς πάντων ἰδέας εἶναι τῶν καθόλου λεγομένων], see pages 198-199 *supra*) To Plato himself is ascribed the doctrine that τὰ αἰσθητὰ πάντα exist by participation in the ideas (*Metaphysics* 987 B 8-10, see notes 101 and 102 *supra*)

In *Metaphysics* 1033 B 19-1034 A 8, where Aristotle is concerned to show that his doctrine that form is not generated does not involve separately existing ideas, this latter theory is represented in the argument by the supposition of "sphere" and "house" existing apart from the particular spheres and houses, a state of affairs which would, he contends, preclude generation. His own explanation of form as τοιόνδε and of production as the qualifying of a certain thing in a certain way shows that the doctrine of separate ideas is useless as regards becoming and being He then uses the example of the generation of natural organisms to prove that in *all* cases of production the producer is adequate to cause the form in the matter since τὰ φυσικά are substances in the highest sense, it is in their case especially that one would have looked for paradeigmatic ideas; and, if there is none here, there need be none at all This *a fortiori* argument, however, implies on the part of the Platonists the assumption of ideas in cases other than τὰ φυσικά.

In *Metaphysics* 1091 B 27-30, in attacking the notion that the Good, which is the ἀρχή, is the One or an element of number, Aristotle, after contending that, if the ideas (here considered as numbers) are ideas of goods only, they will not be substances, says that, if they are ideas of substances as well, πάντα τὰ ζῷα καὶ τὰ φυτὰ ἀγαθὰ καὶ τὰ μετέχοντα This dilemma is introduced by the statement ἀλλὰ μὴν ὅτου βούλεται τιθέτω τις εἶναι ἰδέας, but no account is taken of a possible restriction of the ideas to those of "natural objects", while at 1073 A 14-22, in beginning the discussion of the number of the eternal and separate substances, Aristotle expressly says that the doctrine of ideas has no particular view on the question and that those who say that the ideas are numbers speak of the numbers sometimes as unlimited and sometimes as limited to the decad

Metaphysics 988 A 3-4, a reminiscence of *Republic* 596 A-B (see page 108 *supra*), implies for the Platonists ideas of artefacts

B 33: *οἰκίας εἶδος ἡ οἰκοδομική*); the separate existence of the form is possible, if at all, only in the case of "natural entities" (*τὰ φύσει*). Then he adds: *διὸ οὐ κακῶς ὁ Πλάτων ἔφη ὅτι εἴδη ἔστιν ὁπόσα φύσει* (1070 A 18-19). This would seem to be direct evidence that Plato denied the existence of ideas of artefacts;[149] certainly Aristotle's purpose in quoting him is to lend support to his own contention that there can be no separate form of "non-natural" objects, and that implies on his part this interpretation of Plato's words.

Yet in the dialogues Plato *does* assume ideas of artefacts. The ideas of shuttle in the *Cratylus* (389 A-B), of bed and of table in the *Republic* (596 B, 597 C) are notorious; furthermore, in mere consistency the theory requires that there be an idea for every concept without restriction, and this doctrine is either expressed or directly implied in many passages throughout the dialogues (*Republic* 596 A 6-10 [cf. 507 B, 493 E]; *Phaedo* 75 C-D; *Cratylus* 386 D-E, 440 B 4-C 1; *Parmenides* 130 D-E, 135 B 5-C 2; *Timaeus* 51 B-E [cf. Taylor, *Mind*, N. S. V, 1896, p. 304, n. 1 and Ritchie, *Bibliothèque du Congrès International de Philosophie*, IV, 1902, p. 178, n. 1]; *Philebus* 16 C-D [cf. Shorey, *What Plato Said*, p. 604]). Most appropriately significant, however, is the fact that in the last book of Plato's latest work the procedure of the master-craftsman is described in exactly the same words as those which are used in the *Republic* and the *Cratylus* to explain how the artisan fashions shuttle, table, or bed with his eye fixed upon the idea that he is copying[150] On the evidence of Plato's own writings,

[149] This assumes that the text is correct, but Alexander (*apud* Averroes) and Themistius (*In Librum Λ Paraphrasis*, p 8, 14-15 [Latin trans. of Landauer]) seem to have read *οἱ τὰ εἴδη τιθέμενοι ἔφασαν*. A Beckmann (*Num Plato Artefactorum Ideas Statuerit*, pp 30-35, with a reference to Rose, *De Arist. Libr. Ord. et Auct*, p. 151) argues that Plato's name was a later insertion into the text In that case Aristotle would nowhere ascribe such a limitation of the ideas to Plato by name, although it would still be possible that Plato was meant to be included under the rubric, *οἱ τὰ εἴδη τιθέμενοι* (Zeller, *Phil. Griech.*, II, 1, p. 703, n 3, Robin, *Idées et Nombres*, note 175 [p 177]) It is certainly wrong, however, to abandon the unanimity of the MSS on evidence so tenuous as that of Averroes and the Hebrew version of Themistius

[150] *Laws* 965 B-C. *οὐκοῦν ἐλέγομεν τόν γε πρὸς ἕκαστα ἄκρον δημιουργόν τε καὶ φύλακα μὴ μόνον δεῖν πρὸς τὰ πολλὰ βλέπειν δυνατὸν εἶναι, πρὸς δὲ τὸ ἓν*

therefore, it is certain that he posited ideas of artefacts; and there is no suggestion in these writings nor any *direct* evidence in Aristotle's that he ever *altered* his opinion on this subject. Nevertheless, in support of the possible contrary implication of Aristotle's "quotation" (Πλάτων ἔφη ὅτι εἴδη ἔστιν ὁπόσα φύσει) one might adduce the definition of the idea given by Xeno-

ἐπείγεσθαι γνῶναί τε, καὶ γνόντα πρὸς ἐκεῖνο συντάξασθαι πάντα συνορῶντα; 'Ορθῶς. *Ἆρ' οὖν ἀκριβεστέρα σκέψις θία τε ἂν περὶ ὁτουοῦν ὁτῳοῦν γίγνοιτο ἢ τὸ πρὸς μίαν ἰδέαν ἐκ τῶν πολλῶν καὶ ἀνομοίων δυνατὸν εἶναι βλέπειν,* "Ισως Οὐκ ἴσωι, ἀλλ' ὄντως, ὦ δαιμόνιε, . *Republic* 596 B *οὐκοῦν καὶ εἰώθαμεν λέγειν ὅτι ὁ δημιουργὸς ἑκατέρου τοῦ σκεύους πρὸς τὴν ἰδέαν βλέπων οὕτω ποιεῖ ὁ μὲν τὰς κλίνας, ὁ δὲ τὰς τραπέζας, αἷς ἡμεῖς χρώμεθα, καὶ τἆλλα κατὰ ταὐτά; *Cratylus* 389 A-B *ποῖ βλέπων ὁ τέκτων τὴν κερκίδα ποιεῖ; ἆρ' οὐ πρὸς τοιοῦτόν τι ὃ πέφυκε κερκίζειν;* Πάνυ γε *Τί δέ; ἂν καταγῇ αὐτῷ ἡ κερκὶς ποιοῦντι, πότερον πάλιν ποιήσει ἄλλην πρὸς τὴν κατεαγυῖαν βλέπων, ἢ πρὸς ἐκεῖνο τὸ εἶδος πρὸς ὅπερ καὶ ἣν κατέαξεν ἐποίει; Πρὸς ἐκεῖνο* (For parallels to these examples of the craftsman who looks to the ideas cf Shorey, *Unity*, pp 31-32 and 61-62 [with n 473])

The *Seventh Epistle* attributed to Plato is emphatic in its express assertion of the existence of ideas of artefacts *ταὐτὸν δὴ περί τε εὐθέος ἅμα καὶ περιφεροῦς σχήματος καὶ χρόας, περί τε ἀγαθοῦ καὶ καλοῦ καὶ δικαίου, καὶ περὶ σώματος ἅπαντος σκευαστοῦ τε καὶ κατὰ φύσιν γεγονότος, πυρὸς ὕδατός τε καὶ τῶν τοιούτων πάντων, καὶ ζῴων σύμπαντων πέρι καὶ ἐν ψυχαῖς ἤθους, καὶ περὶ ποιήματα καὶ παθήματα σύμπαντα* (342 D) Those who accept this as an authentic writing of Plato must admit that five or six years before his death he insisted upon ideas of artefacts and did so with a special emphasis which would seem to imply that he was maintaining this doctrine in the face of doubts or denials (cf Wilamowitz, *Platon*, I, p 599, n 1, for the date of *Epistle* VII cf Wilamowitz, *op. cit*, II, p 299 [352 B C], Novotný, *Platonis Epistolae*, p 142 ["fortasse a 352"], Harward, *The Platonic Epistles*, p 192 [353 B C], Morrow, *Studies in the Platonic Epistles*, p. 48 [end of 354 or beginning of 353]). The very detail of the catalogue of ideas may, on the other hand, justly arouse suspicion concerning its authenticity. If the author of the *Epistle* or of the "philosophical digression" is not Plato, however, the passage is still of importance as evidence of a party of Platonists who, in opposition to interpretations such as that of Aristotle, maintained that Plato never meant to deny ideas of artefacts. For the early date accepted by those who believe either the *Epistle* or the "digression" spurious cf Heidel, *Pseudo-Platonica*, p. 33 (the whole letter "not earlier, nor much later, than 290 B C"), C Ritter, *Platos Gesetze*, pp. 374-5 and *Neue Untersuchungen*, pp. 404-5 (the "digression" by a student of Plato's); Shorey, *What Plato Said*, p 41 (the two longer letters "if not written by Plato himself, must have been composed not later than a generation or two after his death by some Platonist"), Juroszek, *Commentatio Critica de Platonis quae ferunur Epistulis* = *Diss. Phil. Vind.* XI, pars 3 (p. 153 "Paene affirmaverim epistulam haud multo post mortem Platonis scriptam esse—haud scio an Dionysio vivo")

crates. *αἰτία παραδειγματικὴ τῶν κατὰ φύσιν ἀεὶ συνεστώτων*, a definition preserved by Proclus who interprets it as an implicit denial of ideas of *τὰ παρὰ φύσιν* and *τὰ κατὰ τέχνην* (Xenocrates, *frag.* 30 [see page 208 *supra*]). This definition Xenocrates apparently believed to represent Plato's own opinion; and Plato's conception of the idea is described in similar phraseology by Diogenes Laertius (III, 77 *τὰς δὲ ἰδέας ὑφίστασθαι αἰτίας τινὰς καὶ ἀρχὰς τοῦ τοιαῦτ' εἶναι τὰ φύσει συνεστῶτα, οἷάπερ ἐστὶν αὐτά*). On the other hand, the story of Plato's reply to Diogenes the Cynic concerning *τραπεζότης* and *κυαθότης*, the point of which is the discomfiture of Diogenes and which consequently cannot have arisen among the Cynics, shows that by Platonic sympathizers of some kind Plato was believed to have posited ideas of artefacts (Diogenes Laertius, VI, 53); and Albinus, who himself mentions the definition of the idea as *παράδειγμα τῶν κατὰ φύσιν αἰώνιον*, says that *most* of Plato's disciples refuse to admit ideas of artificial objects and so by implication recognizes a disagreement on this subject within the school ("Alcinous" [i. e. Albinus], *Didaskalikos*, chap. IX [p. 163, Hermann]).[151] Of

[151] *οὔτε γὰρ τοῖς πλείστοις τῶν ἀπὸ Πλάτωνος ἀρέσκει τῶν τεχνικῶν εἶναι ἰδέας, . . οὔτε μὴν τῶν παρὰ φύσιν, . οὔτε τῶν κατὰ μέρος, . . . ἀλλ' οὐδὲ τῶν εὐτελῶν τινός, . οὔτε τῶν πρός τι, . εἶναι γὰρ τὰς ἰδέας νοήσεις θεοῦ αἰωνίους τε καὶ αὐτοτελεῖς* (On the notion that the ideas are thoughts of God cf. R M Jones, *Class Phil*, XXI [1926], pp 317-326, and R E Witt, *Albinus*, pp. 70-76, who thinks that Alcinus refers to this doctrine [see Appendix III, pages 498-499 *infra*] and who even seems inclined to accept the Plotinian interpretation of *Timaeus* 39 E [on which cf Shorey, *Class Phil*, XXIII, 1928, pp. 344 and 354].) At the beginning of chap XII (p 166, Hermann) Albinus writes: *ἐπεὶ γὰρ τῶν κατὰ φύσιν αἰσθητῶν καὶ κατὰ μέρος ὡρισμένα τινὰ δεῖ παραδείγματα εἶναι τὰς ἰδέας* and Diels prints this as *frag* 1 of the *Epitome* of Arius Didymus along with Stobaeus, *Eclog*, I, 12, 2[a], (I, p 135, Wachsmuth): *τῶν κατὰ φύσιν αἰσθητῶν κατὰ γένος ὡρισμένα τινὰ παραδείγματα φάμενος εἶναι τὰς ἰδέας* . (*Dox Graec*, p 447) Finally, in Aetius, I, 10, 1 (*Dox Graec*, pp 308-9; Stobaeus, *Eclog*, I, 12, 1[a]) the idea is defined as *οὐσία ἀσώματος, αἰτία τῶν οἷα ἐστὶν αὐτή* (cf Wachsmuth, *app crit ad loc*, I, p. 134), *καὶ παράδειγμα τῆς τῶν κατὰ φύσιν ἐχόντων αἰσθητῶν ὑποστάσεως*. Here the ideas are restricted to natural *sensibles*. For the doctrine of the Neo-Platonists, who denied ideas of artefacts, cf Syrianus, *Metaph.*, pp 107, 6-108, 7 and Zeller, *Phil Griech*, III, 2, pp 581, 828, and 861, n 3. For variations of the Diogenes story cf. A Packmohr, *De Diogenis Sinopensis Apophthegmatis*, p. 84 His attempt to explain *τραπεζότητα* and *κυαθότητα* as a later variation is artificial and uncon-

the attempts to explain the apparent discrepancy between the Platonic dialogues and Aristotle's "quotation," only that of Robin (*Idées et Nombres*, pp. 173-181) is at all promising.[152] He calls attention to the fact that in Aristotle's own system there is a difference between the objects of the imitative arts and those of the productive arts; the former have the shape but not the "form" of their models, whereas the latter have an essence or "form" which expresses itself in the function of

vincing, since the later Platonists denied ideas of artefacts, it is more likely that these were changed to *ἀνθρωπότης* and *ἱππότης* than *vice versa*

[152] An outline and criticism of previous explanations is given by Robin (*Idées et Nombres*, n 175) These explanations fall into four classes: 1) Plato's reference to artefacts is merely by way of example and not to be taken seriously (so Proclus, *In Timaeum* 104 F [I, p 344, Diehl], *In Parmenidem*, V, pp 57-58, Cousin [pp 642-3, Stallbaum], Bonitz, *Metaphysica*, pp 118-119) Against this cf. Beckmann, *Num Plato Artefactorum Ideas Statuerit*, pp 12-17, 20-21, it is sufficient to note that the general principle enunciated in *Republic* 596 A requires ideas of artefacts as it does of all *τὰ πολλά, οἷς ταὐτὸν ὄνομα ἐπιφέρομεν* and that Aristotle himself recognizes this principle (see note 148 *supra*) 2) Plato at first posited ideas of artefacts but later changed his opinion. This is the explanation of most scholars who, however, disagree as to details (Susemihl, *Genet. Entwick. der Plat. Philosophie*, II, 2, pp 540-541, Zeller, *Phil. Griech.*, II, 1, pp 703-704; Heinze, *Xenokrates*, pp 52-54, Apelt, *Beiträge*, p. 83, Piat, *Platon*, p 86; against Jackson's attempt to find in the "later" dialogues the restriction to "natural types" [*Journal of Philology*, X, pp 253 ff., XI, pp 287 ff, XIII, pp 1 ff. and 242 ff, XIV, pp 173 ff, XV, pp 280 ff] cf Shorey, *A. J. P.*, IX [1888], pp 274-309, Zeller, *Kleine Schriften*, I, pp 369 397; Beckmann, *op. cit.*, pp 21-25). No such change can be found in the dialogues, nor does Aristotle allude to any alteration in Plato's opinion, although he certainly would have done so (in *Metaphysics* 991 B 3-9 = 1080 A 2-8, for example) had he known of such a change (cf. the comparison of the *Timaeus* and *ἄγραφα δόγματα*, *Physics* 209 B 13-16). 3) Aristotle never meant to refer this limitation to Plato but only to his pupils (Beckmann, *op. cit.*, pp. 29-35) This interpretation depends upon an unwarranted alteration in the text (see note 149 *supra*), which would still allow for a reference to Plato himself among *οἱ τὰ εἴδη τιθέμενοι*, furthermore, it leaves the definition of Xenocrates unexplained 4) Aristotle simply misinterpreted Plato (Zeller's earlier view [*Platonische Studien*, p 262]) This not only fails to reckon with the Xenocratean definition but leaves without explanation what purports to be the direct quotation of Plato's words

Finally there is the suggestion that Plato himself "hesitated" on this point (cf. Fouillée, *La Philosophie de Platon*[2], I, p. 109). This compromise is hardly satisfactory in the face of the explicit statements of Plato's writings on the one hand and the apparently definite quotation on the other.

the object, so that, although the logic of his system requires that everything natural or artificial have a form which is the essence and function peculiar to the thing, some "artefacts" have no real form or proper essence but only an appearance Now these "imitations" are not objects of scientific propositions, and so the "arguments from the sciences" would not require that there be ideas of them. Robin, therefore, suggests that Plato admitted ideas of artefacts in the sense of objects of the *productive* arts but not of artefacts in the sense of objects of *imitative* art. The Platonic dialogues, which the self-imposed limits of Robin's method prevented him from considering, support this suggestion. In the *Republic*, for example, the artisan of bed and table looks to the ideas (596 B) but the imitative artist looks not to the ideas as his models but to the material objects and of these apprehends only a phantasm (598 A-B). This is in accord with the scheme of the "divided line" where the class of artefacts (τὸ σκευαστὸν ὅλον γένος) is put into the same section as all living organisms while the class of "images" below consists of likenesses of the objects of *this* class (*Republic* 510 A); that the class of "images" here includes the objects of the imitative arts is established by a passage of the *Sophist* (265 B-266 D) in which the imitative arts practiced by man are distinguished from the productive arts and are put on the same level as the divine production of images, which are shadows, reflections, and dreams. The imitative "arts," whether divine or human, copy the objects created by the productive arts of god and man; these imitations, therefore, are not, as such, likenesses of ideas and are below the artefacts proper in degree of reality [158]

If this is the distinction on which is based Aristotle's assumption that Plato rejected ideas of artefacts, one must conclude with Robin that Aristotle was in this matter a singularly narrow

[158] The objection has frequently been made that there is no reason why the artist may not look to the ideas as his models rather than to the phenomena To this Plato's answer (*Republic* 599 A-B) seems to be that in that case the artist would produce the objects which he now imitates instead of the mere semblances of them The painters who use the "divine model" are the philosophic statesmen and educators (*Republic* 500 B), and the truest drama is the constitution which is a μίμησις τοῦ καλλίστου καὶ ἀρίστου βίου (*Laws* 817 B).

or very blind interpreter of the Platonic doctrine. Robin's solution, however, correct as it appears to be in so far as it concerns the Platonic doctrine, fails to account for the purported statement of Plato ὅτι εἴδη ἔστιν ὁπόσα φύσει and explains the definition of the idea given by Xenocrates on the assumption that he misrepresented Plato's theory in the same way as Aristotle [184] Now in the passage in which the Platonic quotation stands (1070 A 9-21) Aristotle uses τὰ φύσει in a sense which is more restricted than it could have had for any of those who posited ideas, for health which is produced κατὰ τέχνην (1070 A 16-17, cf. 1070 B 30-35. τὰ ἀπὸ διανοίας and 1034 A 9-10: τὰ μὲν γίγνεται καὶ τέχνῃ καὶ ἀπὸ ταὐτομάτου, οἷον ὑγίεια) is excluded from τὰ φύσει, although the Platonists certainly posited an idea of health (*Metaphysics* 997 B 8-10 and 30-32, *Eth. Nic.* 1097 A 11-13, *De Generatione* 335 B 21-23, *frag.* 187). Consequently, although he argues as if it were granted that there is no separate form of τὸ κατὰ τέχνην, his own evidence forbids the ascription to the Platonists of the interpretation which he gives to this distinction, and it is clear that the ὁπόσα φύσει in Plato's mouth could not have been the equivalent of τὰ φύσει as Aristotle uses

[184] *Idées et Nombres*, note 175 (p 178) Robin assumes for Plato, on the basis of his analysis of Aristotle, a hierarchy of being in which the *imitations* of art are lower than the *products* of art which answer to a definite essence and these, in turn, are lower than the "permanent forms of Nature" He then supposes that Xenocrates exaggerated the distinction between the highest and the second classes, that he could make no room for the latter in the supra-celestial sphere to the realities of which alone he gave the name of ideas, and that in doing this he laid claim to the support of Plato himself We have seen, however, that in the dialogues the objects of the productive arts and "natural" objects are put into the same rank of existence, and Plato nowhere intimates that in the ideal world the ideas of artefacts have a lower degree of reality than ideas of "natural" objects On the contrary, his references to αὐτὸ ὃ ἔστιν κερκὶς (*Cratylus* 389 B) and the ὃ ἔστι κλίνη (*Republic* 597 A, C) along with the formula ἀεὶ αὐτῶν ἕκαστον ὃ ἔστι . . ὡσαύτως κατὰ ταὐτὰ ἔχει (*Phaedo* 78 D; cf. *Politicus* 269 D τὸ κατὰ ταὐτὰ καὶ ὡσαύτως ἔχειν ἀεὶ καὶ ταὐτὸν εἶναι τοῖς πάντων θειοτάτοις προσήκει μόνοις, σώματος δὲ φύσις οὐ ταύτης τῆς τάξεως and *Timaeus* 52 A) show that Xenocrates' phrase, τὰ κατὰ τὰ αὐτὰ καὶ ὡσαύτως ἔχοντα (clearly a description of the ideas, *frag* 18, cf ἡ νοητὴ οὐσία of *frag* 5) need not in itself imply the rejection of ideas of artefacts, although it is on the strength of this phrase that Robin seems to rest his conjecture as to why Xenocrates could not admit the existence of such ideas.

it.[155] Behind Aristotle's argument lies his distinction between *φύσις* and *τέχνη* as *ἀρχὴ κινήσεως ἐν αὐτῷ* and *ἀρχὴ ἐν ἄλλῳ* respectively (1070 A 7-8, cf. *Index Arist.* 836 A 3-11) and the concomitant designation of the results of art as *τὰ ἀπὸ διανοίας* to distinguish them from "natural objects" (1070 B 30-34; cf. 1049 A 5-14, 1065 A 26-27, *Anal. Post.* 94 B 34-95 A 9, *Physics* 196 B 21-22, 198 A 3-4); but Plato both implicitly and explicitly denies such a distinction.[156] In the *Sophist*, where productive art is divided into two classes—human and divine, Plato rejects "the belief

[155] The quotation must be limited to the words *εἴδη ἔστιν ὁπόσα φύσει*, for the following *εἴπερ ἔστιν εἴδη* is Aristotle's reservation. What follows in 1070 A 19-21 is uncertain. Bekker reads *εἴπερ ἐστὶν εἴδη ἄλλα τούτων, οἷον πῦρ, σάρξ, κεφαλή. ἅπαντα γὰρ ὕλη ἐστί, καὶ τῆς μάλιστ' οὐσίας ἡ τελευταία.* This is accepted by Bonitz, Robin, and Tricot. Christ changed to *εἴπερ ἔστιν εἴδη, ἀλλά γ' οὐ τούτων, οἷον κτλ* (Ross in the *Oxford Translation*[1]: *ἀλλ' οὐ τούτων* [*ἄλλου, Vindob phil gr. C*]). Ross in his edition (and *Oxford Translation*[2]) inclines to follow [Alexander], *Metaph.*, p 677, 14-26 in reading *εἴπερ ἔστιν εἴδη ἄλλα τούτων* and in treating as a note which should follow 1070 A 10-11 (*ὅσα . . . ὑποκείμενον*) the words *οἷον πῦρ, . . τελευταία.* Bekker's reading seems to be impossible, for the clause *ἅπαντα γὰρ ὕλη ἐστί* ought to support the possibility just expressed ("if there are ideas other than these things, i. e. than fire, flesh, head"), whereas it would rather be a reason for rejecting it. The same difficulty arises with increased force to prevent us from taking *εἴπερ . . . τούτων* as a parenthesis and *οἷον πῦρ κτλ* closely with *ὁπόσα φύσει*: the following *ἅπαντα γὰρ κτλ.* would overthrow rather than support the judgment *οὐ κακῶς ὁ Πλάτων ἔφη.* The transposition of the pseudo-Alexander is possible (cf. 1040 B 5-10), but the present order may be retained by reading *ἀλλ' οὐ τούτων.* If the latter reading be adopted, *ἀλλ' οὐ τούτων, οἷον κτλ* cannot be taken as part of the quotation (cf. *Physics* 193 B 35-194 A 7: the Platonists do "separate" flesh, bone, man), but it need not be so taken. A perfectly good sense is obtained by reading *ἀλλ' εἴπερ, ἐπὶ τῶν φύσει* (*διὸ δὴ . . . , εἴπερ ἔστιν εἴδη*) *ἀλλ' οὐ τούτων οἷον κτλ.*

[156] Plato uses the word *φύσις* in a wide variety of meanings, most of them current in popular or literary usage. Noteworthy is the way in which he uses the common antithesis *φύσις—τέχνη* as a polar expression to denote inclusiveness (cf. *Republic* 381 A-B *πᾶν δὴ τὸ καλῶς ἔχον ἢ φύσει ἢ τέχνῃ ἢ ἀμφοτέροις*), a usage which is a tacit dismissal of the sophistic distinction. Cf. Beardsley, *The Use of ΦΥΣΙΣ in Fifth Century Greek Literature*, pp. 96-106 (Plato and Aristotle) and among other discussions of Plato's use of the term Benn, *Archiv für Geschichte der Philos.*, IX (1896), pp. 24 ff.; Campbell, *The Republic of Plato* (Jowett and Campbell), II, pp. 317-321; C. Ritter, *Neue Untersuchungen*, pp. 228-326 *passim*. For an attempt to trace the development from Presocratic *φύσις* through Platonic *ψυχή* to Aristotelian *φύσις* cf. Theiler, *Zur Geschichte der teleologischen Naturbetrachtung bis auf Aristoteles*, pp. 84 ff.

of the majority" that "natural objects, organic and inorganic, are produced by φύσις from some cause which is spontaneous and brings to birth ἄνευ διανοίας", on the contrary he asserts τὰ μὲν φύσει λεγόμενα ποιεῖσθαι θείᾳ τέχνῃ τὰ δ' ἐκ τούτων ὑπ' ἀνθρώπων συνιστάμενα ἀνθρωπίνῃ (265 C-E) This assimilation of φύσις to τέχνη is Plato's way of insisting upon the primacy of intelligence and design throughout the universe. In the *Laws* (889 E-892 C) the same thesis is maintained against those who contrast φύσις and τέχνη and equating the former with chance make it prior to the latter, against them Plato will show that soul is prior to body and that therefore intelligence, art, and law, and their activities and products are prior to what the mechanists call φύσις and τὰ φύσει—or that, if, as they say, φύσις refers to what is primary, it is soul that is preëminently φύσει One may say, then, that "nature" is in reality divine τέχνη (cf *Timaeus* 33 C 8-D 1) or that the processes of art exist φύσει (cf. *Laws* 890 D), for it is soul that is the principle of all motion and "arrangement" and so the artificer of everything whether "natural" or "artificial" (cf. *Laws* 892 A, 896 A-D; *Phaedrus* 245 D, 246 B 6-7). It is not the whim of the artificer, however, that determines the characteristics of the artefact; these have objective existence as the artefact *per se*, and it is the business of the artisan to *discover* this "natural" essence and to impose it upon the appropriate material (*Cratylus* 389 B-D, cf *Timaeus* 28 A 6-B 2).[157] It would consequently be not merely possible but necessary that for Plato the phrase ὁπόσα φύσει include ideas of human artefacts[158] Nevertheless, if the sentence is

[157] Cf the pseudo Platonic *Minos* (314 B): ἡ γάρ που τέχνη ἡμῖν εὕρεσίς ἐστι τῶν πραγμάτων. It is in respect of this objective criterion which determines the procedure of true art that Plato can contrast τέχνη, which operates by investigating the φύσις of its object, with ἐμπειρία, which proceeds without knowledge but by a kind of mimicry (*Gorgias* 465 A, 501 A; *Phaedrus* 270 B, *Philebus* 55 E, cf *Laws* 720 B κατ' ἐμπειρίαν τὴν τέχνην κτῶνται, κατὰ φύσιν δὲ μή).

[158] Cf Stenzel, *Platon der Erzieher*, p. 177. Die Reiche der Kultur und der Natur werden von Platon noch völlig unter dem einen Gesichtspunkt der vollen lebhaftigen Wirklichkeit gesehen. Deshalb kann einerseits die Tatigkeit des Handwerkers, der nach dem ihm vorschwebenden richtigen, wahren Bilde eines Gegenstandes Wirklichkeiten schafft, leicht in die übergreifende Ordnung des Kosmos hineingestellt werden, usw. Cf also *op. cit.*, pp 59 f and Stenzel, *Studien*, pp. 116-117.

a genuine quotation, Plato in pronouncing it necessarily implied a restriction of *some* sort, but this restriction is, I think, one to which he refers in the dialogues and which has nothing to do with the distinction between "natural substances" and artefacts In the *Politicus* (262 A-263 B), where Plato goes out of his way to give a formal warning against hasty and inaccurate division, he lays down the rule. τὸ μέρος ἅμα εἶδος ἐχέτω.[159] This leads to the obviously embarrassing question as to how one is to know whether any particular part is really a γένος or not, a question which Plato, instead of answering, puts aside with the excuse that the explanation would require a long digression and the solemn reminder that every εἶδος is a μέρος but not every μέρος an εἶδος [160] The answer, however, in so far as one is possible, is implied in other passages In *Politicus* 259 D, when a division is to be made, the Stranger bids his interlocutor see whether in the concept to be divided he can discern a διαφυή, "a natural distinction" (cf. τομὴν ὑπείκουσαν, 261 A); and later (287 C), where dichotomy is impossible, he prescribes division κατὰ μέλη, which is explained more fully in the *Phaedrus* (265 E) as division which follows the "natural articulation" of its object and does not fracture

[159] Cf *Politicus* 285 B (πρὶν ἂν ἐν αὐτῇ τὰς διαφορὰς ἴδῃ πάσας ὁπόσαιπερ ἐν εἴδεσι κεῖνται), *Republic* 445 C (ὅσοι πολιτειῶν τρόποι εἰσὶν εἴδη ἔχοντες), *Republic* 544 C (ἢ τινα ἄλλην ἴσχεις ἰδέαν πολιτείας, ἥτις καὶ ἐν εἴδει διαφανεῖ τινι κεῖται,).

[160] That the objection to a "long digression" here is only an excuse to cover Plato's embarrassment is clear enough from his explicit defense of "prolixity" and "digression" elsewhere in the dialogue (283 B-287 B), on the other hand it is a sign of his honesty in admitting the existence of the problem to have purposely introduced the question here by causing the interlocutor to make a false division in order to emphasize this pitfall in the use of the method

It has been said that the εἶδος here has nothing to do with the meaning of "idea" as it appears in previous dialogues, i. e a separately existing essence, and that the εἴδη here spoken of are not recognized by "reminiscence" but by logical analysis of phenomena (cf. Raeder, *Platons Philosophische Entwicklung*, p. 338) As a matter of fact, the passage points clearly to the opposite conclusion, for, while a certain method will help one to arrive at εἴδη (n. b. μᾶλλον ἰδέαις ἄν τις προστυγχάνοι, 262 B 7), whether a μέρος is in reality a true εἶδος can never be discovered by this analysis of phenomena, instead, the success of the method depends upon "direct knowledge" of the "natural distinctions." See also note 36 *supra*

any part (*τὸ πάλιν κατ' εἴδη δύνασθαι διατέμνειν κατ' ἄρθρα ᾗ πέφυκεν, καὶ μὴ ἐπιχειρεῖν καταγνύναι μέρος μηδέν, κακοῦ μαγείρου τρόπῳ χρώμενον* cf *Cratylus* 386 D-387 A and see page 55 *supra*). In view of these passages it is clear that the question as to the identification of "divisions" and ideas had become acute in the Academy (see further pages 46-48 *supra*) and that to the question avoided in the *Politicus* Plato's only direct answer could have been *εἴδη ἔστιν ὁπόσα φύσει*, "there are ideas of all things that have objective existence—and of such things only" [101] By such a statement ideas of artefacts would by no means have been excluded or denied; and Aristotle's use of it in support of his own thesis must be considered a misapplication. That he could so misapply a quotation, however, cannot be doubted in the face of other passages in which he introduces with the words *διὸ καὶ Πλάτων φησί* or the like what is rather a conclusion of his own as to the necessary implication of Plato's doctrine than a true quotation or even a correct interpretation of Plato's words (see pages 99-100 *supra* and for further examples of his use of quotation cf. *Crit. Pres. Phil.*, pp 339-346 and Zeller, *Kleine Schriften*, I, pp 445 ff.) The manner in which the quotation is introduced suggests in fact that Aristotle is consciously opposing some other interpretation of Plato's words (for indications of such disputes see pages 87-88 *supra*) Certainly Plato's answer was vague enough to leave room for debate among his followers; granted that all "natural units" in his own sense, i. e. all objective units, are ideas, just what units ought to be considered to be "natural"? Plato's own denial of ideas corresponding to the objects of the mimetic arts would inevitably have given an impulse and direction to the tendency toward a formal limitation of these units. It is reasonable to

[101] C Ritter, in spite of his radically different interpretation of the theory of ideas, pointed out that Aristotle's account of Plato's statement is to be explained from the exposition of the *Politicus* (*Platon*, II, p 160; *Die Kerngedanken*, pp 151-2, see, on the other hand, the earlier *Neue Untersuchungen*, pp 281-3). The way in which Ritter interprets Plato's own doctrine concerning ideas of artefacts rests upon his conception of the meaning of the Platonic ideas (an interpretation already dealt with above) and so differs from the explanation which I have given, but this very fact is, I think, additional confirmation of the probable accuracy of that point in which the interpretations agree, the origin of Aristotle's "quotation."

conjecture that his attitude toward another type of object exerted a similar influence. There are certain non-existing things of which we think and which are objects of representation in speech and art, such as the chimaera or hippocentaur. Of these Plato undoubtedly denied the existence of ideas on the ground that they are not "natural units" and explained them as wilful combinations of ideas which, while real in themselves, do not in reality have intercommunication in any single idea.[162] If such combinations, however, do not correspond to objective unities but are "inventions" of the artists, why should the unity of an artefact not be explained in the same way, why should it be any more objective or "natural" than those other combinations which are created by a human artist? Does not Plato himself even where he distinguishes artefacts from the products of mimetic art call the former class *σύνθετον καὶ πλαστόν* in distinction from organic bodies (*Sophist* 219 A 10-B 2, cf. *Republic* 381 A)? There is in Aristotle's own writings evidence to show that the question of *τὰ φύσει* was connected with the problem of "unity and wholeness" in this fashion. Besides the usual differentiation between nature and art by means of the criterion of motion,[163] Aristotle asserts that the unity and wholeness

[162] Compare the explanation of false statements as expounded by Cornford, *Plato's Theory of Knowledge*, pp 312-317, and n b p 313: "It may be added that the Theory of Forms provides a meaning even for false statements which seem to have no existing subject, such as 'The present King of France favours Free Trade' The description has a meaning, though it stands for no existing person" See the reference to Chimaera, Scylla, Cerberus, *καὶ ἄλλαι τινὲς συχναὶ λέγονται ξυμπεφυκυῖαι ἰδέαι πολλαὶ εἰς ἓν γεγέσθαι* and the "invention" (n b. *πλάττε, δεινοῦ πλάστου, πεπλάσθω, σύναπτε εἰς ἓν τρία ὄντα, κτλ*) of a similar beast in *Republic* 588 C-D and note the use of the "concepts" of centaur and chimaera to combat the proof of the existence of ideas (apparently from the *περὶ ἰδεῶν*), page 229 *supra* Cf the explanation by "synthesis" of such concepts as the centaur (Diogenes Laertius, VII, 53; Sextus, *Adv Math*, VIII, 60; IX, 395; XI, 251)

[163] On the basis of his distinction between nature as a principle of motion in the thing itself and art as such a principle in something other than the thing moved (cf *Metaphysics* 1070 A 7-8) Aristotle enumerates as *τὰ φύσει* animals, plants, their parts, the simple bodies, and the heaven and its parts; all these are substances, for *φύσις* must always inhere in a subject (although the essential attributes of these things as well as the things themselves are *φύσει* and *κατὰ φύσιν*). Cf. *Physics* 192 B 8-193 A 2, *De Caelo* 298 A 27-B 1, *Metaphysics* 1042

imparted by nature is far more complete than that produced by art (*Metaphysics* 1016 A 4, 1023 B 34-36; cf. *Physics* 227 A 13-17 and Eudemus *apud* Simplicius, *Phys.*, p. 879, 18-21). The " nature," which is the unifying principle, is, however, the οὐσία of the thing (*Metaphysics* 1041 B 28-31); and upon this connection of the notions of " substance " and unity rests Aristotle's doctrine that only τὰ φύσει are really substances and of these only organic wholes (*Metaphysics* 1043 B 21-23, 1040 B 5-16, 1034 A 4 [cf. 1070 A 20-21]; contrast the wider use of οὐσία in 1028 B 8-13 and the widest, general use in 1070 A 5-6: τὰ γὰρ φύσει οὐσίαι καὶ τὰ ἄλλα); in this sense artefacts, *parts* of organic wholes, and *states* of substances are all alike excluded (1043 A 4-5, cf. Ross, *ad loc.*), for none of them is a real unity.[184] So in the strict or highest sense τὰ φύσει and οὐσίαι coincide, and the very *possibility* of separable form is for Aristotle limited to these objects. This interpretation of τὰ φύσει marks, as it were, the extreme point reached in the debate concerning " natural units " which was raised by the problems of the relationship of " divisions " to the theory of ideas. This extreme interpretation was certainly not the doctrine of the Platonists, much less that of Plato (see pages 249-250 and note 148 *supra*); yet this, and not merely the exclusion of separate forms of artefacts, is the doctrine to support which Aristotle brings in the quotation from Plato. The use of the quotation does not constitute evidence for supposing even that Aristotle himself believed his interpretation to represent Plato's conscious

A 7-11 (The Platonic assimilation of φύσις to τέχνη reappears transmuted in Aristotle's metaphor of φύσις as *immanent* τέχνη [*Physics* 199 A 11-B 33], a device whereby he saves his teleology) Ross observes (*Metaphysics*, II, p 355) that " the definition of nature really breaks down in the case of generation, but Aristotle would presumably seek to justify it by saying that in some sense the parent and the offspring, being members of the same species, are the same, or that in some sense the offspring is a part of the parent." It also breaks down, however, in the case of the universe as a whole, for the ultimate ἀρχὴ κινήσεως is not immanent but transcendent (*Metaphysics* Λ, chap. 7 and 1075 A 11-15). In fact, Aristotle's exact account is that *inanimate* natural bodies have an ἀρχὴ κινήσεως not in the sense of an ἀρχὴ τοῦ κινεῖν but only of an ἀρχὴ τοῦ πάσχειν (*Physics* 255 B 30-256 A 3)

[184] This same trend of thought leads Aristotle to the point of making the state πρότερον φύσει to the individual, the latter is equated with a *part* that is φύσει only in the whole (*Politics* 1253 A 18-29, cf. *Metaphysics* 1035 B 23-25).

meaning but only that in accordance with his own doctrine of "natural substance" he believed this to be the necessary consequence of Plato's dictum. That *some* Platonists rejected ideas of artefacts Aristotle certainly believed (see note 147 *supra* and Alexander, *Metaph.*, pp. 79, 19-80, 6 [pages 240-242 *supra*]), and it is plausible that certain of Plato's pupils may have come to this conclusion in the way suggested above.[165] Among these Platonists Xenocrates may have been one; but it is by no means as certain as has usually been assumed that his definition of the idea committed him either to this restriction for himself or to the belief that this was the opinion of Plato. Proclus, in view of his own doctrine, was bound to hold, as he did (*In Parmenidem*, V, 136, Cousin), that the phrase τῶν κατὰ φύσιν ἀεὶ συνεστώτων was meant to exclude ideas *both* of τὰ παρὰ φύσιν *and* of τὰ κατὰ τέχνην (so Heinze, *Xenokrates*, pp. 52-53, who takes this to be Plato's "later" theory); but in consideration of the Platonic attitude toward φύσις and τέχνη, there is no reason to suppose that κατὰ φύσιν must imply opposition to κατὰ τέχνην *as well as* to παρὰ φύσιν. The phrase is, without further context, ambiguous, but it could equally well mean either "whatever things have a real, objective existence" (as opposed to such combinations as "chimaeras"), in which case it would be equivalent to Plato's ὁπόσα φύσει as interpreted above, or "whatever things are in their normal states" (as opposed to deviations such as malformations whether "natural or artificial").[166]

[165] One might argue that Eudoxus and the "others" who attempted to make the ideas *immanent* causes of phenomena (*Metaphysics* 991 A 14-19, 1079 B 18-23) could hardly have accounted for ideas of artefacts, but whether they expressly rejected them or—as is more likely—simply neglected to consider the problem we have no means of knowing.

[166] For this use of κατὰ φύσιν and παρὰ φύσιν cf. *Timaeus* 66 C, 82 B-83 A, *Politicus* 308 D 1, *Philebus* 32 A, *Laws* 918 B 1-2, cf. Speusippus' definition of happiness as ἕξιν τελείαν ἐν τοῖς κατὰ φύσιν ἔχουσιν (*frag.* 57). See the Neo-Platonic argument that there are no ideas of κακά and αἰσχρά because στερήσει μᾶλλον καὶ ἀποστάσει τῶν εἰδῶν ταῦτα παρυφίσταται τῇ φύσει, διὸ καὶ παρὰ φύσιν ἔχειν λέγεται (Syrianus, *Metaph.*, p. 107, 8-9). Even for Plato himself there was no need of ideas for every degree of deviation from the "normal," since allowance was made for varying degrees of participation in a single idea (cf. *Republic* 472 B-D, see page 266 *infra*). See also the Neo-Pythagorean distinction of τὸ κατὰ φύσιν as ἀκρότης ἀνεπίδεκτος from τὸ παρὰ φύσιν which admits τὸ μᾶλλον καὶ ἧσσον (Sextus, *Adv. Math.*, X, 272).

That the definition was later used as supporting evidence by those who wished to reject ideas of artefacts is in itself no certain indication of what Xenocrates meant by it.[167]

[167] Heinze himself has to reject part of the conclusion which ought in strictness to follow from his interpretation of *τῶν κατὰ φύσιν δεῖ συνεστώτων*, namely that the phrase excludes ideas of *abstracta*, and he does so on the ground that *κατὰ φύσιν* had a different connotation for Aristotle from what it had for Plato (*Xenokrates*, p 54) He makes much of the word *συνεστώτων*, saying that it means "das feste, bestimmte Seiende Das ist aber alles, was der Philebus eine *γεγενημένη οὐσία* nennt, also alles aus *πέρας* und *ἄπειρον* Gewordene" Considering the explicit connection of *τὸ μέτριον* and the arts in the *Politicus* (284 A-E, cf Shorey, *Unity*, n 473), it is difficult to see why this interpretation should imply the exclusion of ideas of artefacts

Furthermore, the text of the definition itself is not above suspicion Chaignet thinks that, since Albinus gives the definition as *παράδειγμα τῶν κατὰ φύσιν αἰώνιον*, the *τῶν δεῖ συνεστώτων* of Proclus indicates only that he read *αἰωνίων* instead of *αἰώνιον* (Chaignet, *Proclus Commentaire sur le Parménide*, II [Paris, 1901], p 38, n 2) In that case *δεῖ συνεστώτων* would be merely a paraphrase of Proclus' own based upon what may have been a false reading (If Witt [*Albinus and the History of Middle Platonism*, p 16] is right in supposing that *Timaeus* 28 A was the basis for Xenocrates' definition, *αἰώνιον* would probably be the right reading, but there is no reason for connecting the definition specifically with this passage) Nevertheless, the definition of the ideas (obviously from the same ultimate source) given by Diogenes Laertius (III, 77) is *αἰτίας τινὰς καὶ ἀρχὰς τοῦ τοιαῦτ' εἶναι τὰ φύσει συνεστῶτα, οἷάπερ ἐστὶν αὐτά* Here the *δεῖ* is not represented, but the *συνεστώτων* reappears Ross, however, in one place (*Metaphysics*, I, p 192) quotes the Proclus passage with *διεστώτων* instead of *συνεστώτων*. His reference is given as "Procl *in Parm* i 888 18 Cousin" (? Cousin's second edition [*Procli Opera Inedita*, Paris, 1864]) Cousin in both his first and second editions reads *συνεστώτων* without variant and Chaignet in his translation (*loc cit*) does the same, but Ross also quotes (*loc cit*) the definition from Diogenes Laertius with *διεστῶτα* instead of *συνεστῶτα*, and—although the editions read *συνεστῶτα*—the variant *διεστῶτα* here is noted by the Basel editors of Book III, who, to be sure, reject it with a reference to the passage of Proclus Now, *τὰ φύσει διεστῶτα* is certainly the *lectio difficilior* and is unlikely to be a mere scribal error for *συνεστῶτα*, nor is anyone likely *purposely* to have substituted it for *συνεστῶτα*, but it would give a sense which exactly corresponds with the interpretation given above for Plato's *εἴδη ἔστιν ὁπόσα φύσει*, for it would mean "the things which are objectively distinct from one another" The use of the word *διεστῶτα* in this connection is supported by a number of Platonic passages *Philebus* 18 C (*τρίτον εἶδος διεστήσατο*), 23 D (*κατ' εἴδη διιστάς*); *Politicus* 260 C (*τὴν ἐπιτακτικὴν τέχνην . . θεατέον εἰ πῃ διέστηκεν*), *Republic* 532 E (*κατὰ ποῖα εἴδη διέστηκε*), 564 C (*τριχῇ διαστησώμεθα τῷ λόγῳ δημοκρατουμένην πόλιν, ὥσπερ οὖν καὶ ἔχει*); *Gorgias* 465 C (*διέστηκε μὲν οὕτω φύσει, ἅτε δ' ἐγγὺς ὄντων φύρονται ἐν τῷ*

There is not, then, any real evidence in Aristotle that Plato himself rejected ideas of artefacts, the *direct* evidence that the Platonists did so, apart from one passage which expresses Aristotle's own deduction of the consequence of a theory of idea-numbers limited to ten, consists of two passages, which are in fact a doublet, both of which apparently come from the περὶ ἰδεῶν (991 B 6-7 = 1080 A 5-6, see note 147 *supra* and Appendix II on 1080 A 9-11). The evidence of Alexander makes it necessary to suppose that in the περὶ ἰδεῶν Aristotle directly charged that the "arguments from the sciences" lead to ideas of artefacts which, however, were not admitted; in the *Metaphysics* he is much vaguer, saying only that they imply ideas of everything of which there is ἐπιστήμη. Later on in this passage of the *Metaphysics* we find him arguing that the objects of ἐπιστήμη are not limited to *substances* whereas the Platonists *ought* to restrict ideas to those of substances Now, while Aristotle identifies τὰ φύσει and οὐσίαι in the strictest sense of the terms, so that one might suppose him to be including artefacts among what he here calls μὴ οὐσίαι[188] and thus get a reference to the denial of such ideas in this passage too, the form of the argument shows that οὐσία here is used in the sense of substance as opposed to the attributive categories and there is no question of ideas which the Platonists deny but only of those which Aristotle argues that they *should* deny If the reference to ideas of artefacts in the περὶ ἰδεῶν was explicitly connected with the "arguments from the sciences," the substitution of the vague circumlocution in the *Metaphysics* (εἴδη πάντων ὅσων ἐπιστῆμαί εἰσιν) can hardly have been accidental and so may be an admission that the objection as made in the earlier work did not equally affect all who used this demonstration to establish ideas

αὐτῷ); *Timaeus* 42 B (ὁπόσα ἐναντίωσι πέφυκε διεστηκότα) Consequently I am inclined to believe that Xenocrates' definition originally contained the word διεστῶτα (in some form), *not* συνεστῶτα, and that the statement of Plato which it intended to reproduce was that which Aristotle quotes but which in full ran. εἴδη ἔστιν ὁπόσα φύσει διέστηκεν. Inasmuch, however, as διεστῶτα and συνεστῶτα are but opposite faces of the same logical complex, I have considered it safer to *interpret* the latter rather than to emend it

[188] This interpretation of artefacts as "non substance" is in fact assumed by the LF version of Alexander's commentary on 990 B 22 ff. (*Metaph.*, p. 88, line 6 from bottom): οὐκ ἐπὶ τῶν οὐσιῶν μόνον ἀλλὰ καὶ ἐπὶ τῶν τεχνῶν.

It will be noticed that where the direct reference to the Platonists' rejection of ideas of artefacts is retained it occurs in connection with the problem of generation, to explain which Aristotle argues that the ideas are neither necessary nor sufficient. On the other side stand certain remarks of Aristotle which imply that the Platonists did *not* exclude ideas of artefacts (see note 148 *supra*). All this points to a dispute among Plato's pupils centering in the determination of the "natural unities," a problem which the relationship of diaeresis to the theory of ideas would render ever more acute.[149] That the question of this relationship produced various Academic theories among which in his criticism of diaeresis Aristotle neglects to distinguish has already been demonstrated (pages 44-48, 59-60 *supra*). So it seems that some Platonists rejected ideas of artefacts (relying in this upon Plato's denial of ideas for the objects of mimetic art) while others still retained ideas of "useful" artefacts, i. e. artefacts which have an ἀρετή of their own, the result of an οἰκεῖος κόσμος (cf *Gorgias* 506 D-E). Against the former Aristotle argues that, if an artefact can be produced without a separate idea, the same is true of other objects; against the latter he contends that, since in living organisms the parent obviously produces the offspring so that no separate form need be assumed here, it is unnecessary to posit ideas for anything at all (*Metaphysics* 1033 B 19-1034 A 8); but in the περὶ ἰδεῶν he put all the arts on the same level and labeled their productions "artefacts" without distinction (cf. Alexander, *Metaph.*, p. 80, 4-5: ὁμοίως καὶ ἡ ἀνδριαντοποιητικὴ καὶ ἡ γραφικὴ καὶ ἡ οἰκοδομικὴ δὲ καὶ τῶν ἄλλων ἑκάστη τεχνῶν ἔχει πρὸς τὰ ὑφ' ἑαυτήν).

Aristotle's tendency to refute the Platonists generally by developing an inconsistency between the doctrines of different "sects" without distinction prohibits the inference that all

[149] It is interesting to notice in this connection that Speusippus, who was much concerned with the method of division and who abandoned the ideas altogether but posited separately existing mathematicals, is said to have called the decad φυσικωτάτη and at the same time to have likened it to an εἶδος τεχνικόν saying that it was παράδειγμα παντελέστατον τῷ τοῦ παντὸς ποιήτῃ θεῷ προκειμένη (Speusippus, *frag.* 4, p 54, 13 17, Lang [in line 14 ἐφ' ἑαυτῆς should be read, not ἀφ' ἑαυτῆς; the gender shows that this phrase goes with ὑπάρχουσα⟨ν⟩, not with εἶδος, and should give the positive notion of which ἀλλ' οὐχ ἡμῶν . . θαμένων is the negative, cf. *A J P.*, LX, 1939, p. 254]).

who used the "arguments from the sciences" rejected ideas of artefacts, the vagueness of the *Metaphysics* passage in comparison with that of the περὶ ἰδεῶν is in itself some evidence that not all of them, at any rate, did so, and the tenor of the passage in which Plato is quoted indicates that there were those who disagreed with the interpretation there given to Plato's statement

B "The One over Many."

The argument called τὸ ἓν ἐπὶ πολλῶν establishes the existence of ideas on the ground that the common predicate of the various members of a group of particulars is a single identity which is not identical with any of the particulars There are unmistakable references to this line of reasoning, even though there are no formal statements of the argument, in the text of Plato;[170] and Aristotle, too, elsewhere than in the present context refers to the idea as an hypostatization of the ἓν ἐπὶ πολλῶν (*Metaphysics* 990 B 6-8 = 1079 A 2-4 [pages 198-199 and note 117 *supra*], 1040 B 29-30; *Anal. Post.* 77 A 5-9, 85 B 15-22). In the last two of these passages (see pages 71-72 *supra*) Aristotle displays the same attitude toward this argument as that which was expressed with regard to the arguments from the sciences, namely that it proves the existence of a ἓν καὶ τὸ αὐτὸ ἐπὶ πλειόνων but not that this existence is *separate* from the particulars (Alexander, *Metaph.*, p 81, 7-10 and p. 79, 15-19; see pages 235-239 *supra*) The nature of the ἓν ἐπὶ πολλῶν serves

[170] The closest approach to a formal statement occurs at *Parmenides* 132 A 1-5 *οἶμαί σε ἐκ τοῦ τοιοῦδε ἓν ἕκαστον εἶδος οἴεσθαι εἶναι ὅταν πόλλ' ἅττα μεγάλα σοι δόξῃ εἶναι, μία τις ἴσως δοκεῖ ἰδέα ἡ αὐτὴ εἶναι ἐπὶ πάντα ἰδόντι, ὅθεν ἓν τὸ μέγα ἡγῇ εἶναι* 'Αληθῆ λέγεις. The "customary procedure" referred to in *Republic* 596 A consists in positing a single idea for each group of particulars to which the same name is applied; and the argument of τὸ ἓν ἐπὶ πολλῶν is obviously implied in the statement of *Republic* 597 C 7-9 that, if there were two ideas of bed, *πάλιν ἂν μία ἀναφανείη ἧς ἐκεῖναι ἂν αὖ ἀμφότεραι τὸ εἶδος ἔχοιεν, καὶ εἴη ἂν ὃ ἔστιν κλίνη ἐκείνη ἀλλ' οὐχ αἱ δύο* The principle of the argument may be seen in application in *Sophist* 243 D E (*φέρε, ὁπόσοι θερμὸν καὶ ψυχρὸν ἢ τινε δύο τοιούτω τὰ πάντ' εἶναί φατε, τί ποτε ἅρα τοῦτ' ἐπ' ἀμφοῖν φθέγγεσθε, λέγοντες ἄμφω καὶ ἑκάτερον εἶναι; τί τὸ εἶναι τοῦτο ὑπολάβωμεν ὑμῶν; πότερον τρίτον παρὰ τὰ δύο ἐκεῖνα* . ,) and in *Philebus* 34 E 3-4 (quoted in note 175 *infra*).

him even as a direct refutation of the existence of ideas, for their separation and individualization prevent them from being common predicates (see note 121 *supra*).

The answer to the argument here, however, is simply that according to it the Platonists ought to posit ideas of negations (and of non-existents [Alexander, *Metaph.*, p. 80, 16]) which they refuse to do This criticism is especially surprising in view of the fact that Alexander reports, presumably from the same source, the περὶ ἰδεῶν,[121] an argument of the Platonists which uses negations to prove the separate existence of the ἓν ἐπὶ πολλῶν as an idea and which quite rightly assumes that, when of several subjects the same predicate is denied, it is a single *positive* term in reference to which the negations are made· for example, in the statements, " A, B, and C are not white," the common predicate is the identical term " white." This, however, is the explanation of negative judgments which Plato gives in the *Sophist* (cf Cornford, *Plato's Theory of Knowledge*, pp 202, 252) A negation indicates merely that the thing designated by the words following the negative does *not* apply to the subject, that the predicate is *something* from which the subject is different (*Sophist* 257 B 9-C 3) whatever is called " not beautiful " is so called in reference to nothing other than the " beautiful " from which it is different (257 D). Absolute non-being, the contrary of being, Plato emphatically dismisses as meaningless (258 E 6 ff , cf. 238 C); the μὴ ὄν involved in negations is simply the relation of difference between two entities, the difference which, pervading all existent things in their relations to one another, is in each particular case that which is contrasted with a definite existent (258 D-E). The argument recorded by Alexander and this portion of the *Sophist* are complementary and show that the Platonic explanation of negation rendered invalid Aristotle's objection to the argument of the ἓν ἐπὶ πολλῶν. It is significant that his answer to this second form of the Platonic argument is, if strictly interpreted, not quite the same as that which in the *Metaphysics* and the

[121] Cf at the end of the argument (*Metaph*, p 81, 20-22)· τοῦτον δὴ τὸν λόγον φησὶν (*scil* Aristotle) καὶ τῶν ἀποφασκομένων ἰδέας ποιεῖν ὁμοίως γὰρ ἐν ἀμφοτέροις τὸ ἓν This must mean that Aristotle took cognizance of this argument and tried to show that it implies the same contradiction.

περὶ ἰδεῶν charges that the direct argument from the common predicate leads to ideas of ἀποφάσεις, this argument, he says, creates ideas of ἀποφασκόμενα as well as of καταφασκόμενα, for the unitary concept (τὸ ἕν) is similarly involved in both (Alexander, *Metaph.*, p. 81, 20-22). This is quite right; the Platonists did posit ideas of the predicates negated, but these are not themselves "negations" or "non-existents" The point of reference for what "is not beautiful" is not "the not-beautiful" but "the beautiful," not the *negatived* predicate but the thing indicated by the words which *follow* the negative particle, for the "not being x" consists in the distinction and contrast of one existent with another (*Sophist* 257 E, cf. Alexander, *Metaph.*, p. 81, 14-15: πρὸς ἕν τι τὴν ἀναφορὰν ποιούμενος τὸ λευκὸν ἀποφάσκει τὸ αὐτὸ πάντων).

Whence, then, Aristotle's notion that the ἓν ἐπὶ πολλῶν must lead to ideas of negations? He insisted that this argument necessitates an idea of τὸ μὴ εἶναι and, if one allows this, that there would then be a single idea of heterogeneous and utterly different things, of line and man, for example, inasmuch as they are not horses (Alexander, *Metaph.*, p. 81, 2-5) [172] Plato does insist that τὸ μὴ ὄν exists and is an idea; but he denies that it is non-being in the absolute sense of the contrary of being, and he identifies it rather with the idea of difference which is itself not a negation but a positive idea, that idea by communion in which one existent is contrasted to all other existents and differentiated from them (*Sophist* 258 D-259 B). In spite of

[172] *Ibid* lines 5-7 there would also be a single idea of τὰ ἄπειρα, and also a single idea of such things as "man" and "animal" (for both are not wood) "Indeterminateness" is, of course, contrary to the essential character of the idea, for it is the negation of "limit" in every sense (see pages 86-87 and 106-107 *supra*; cf Shorey, *What Plato Said*, pp 320 and 606) One may find the answer to the kind of argument which here tries to force on the Platonists a single idea of "the unlimited" or "the indefinite" in Plato's remark at *Sophist* 256 E: περὶ ἕκαστον ἄρα τῶν εἰδῶν . . . ἄπειρον δὲ πλῆθει τὸ μὴ ὄν. Even in the world of ideas one could find this negation of "limit," but that means only that the "not being" of every idea is unlimited because there is an unlimited number of existents in reference to which each idea may be said not to be something or other So both animal and man are not wood, although there is no single idea "not wood" (Concerning the objection based upon the "priority" of animal to man see Appendix VI, pages 523 ff. *infra*)

Plato's emphatic exposition of his meaning in this regard, Aristotle, as has been seen, clearly insists in other connections on identifying τὸ μὴ ὄν of the *Sophist* with absolute non-being, the contrary of the idea of existence, and even with "the false" (see pages 91-101 and note 86 *supra*). His contention here that the ἓν ἐπὶ πολλῶν in negations must lead to an idea of non-being which would be the single idea of heterogeneous things is an example of the same neglect or misunderstanding of the doctrine expounded in the *Sophist*.[172] Still, even though Plato denied that the idea of non-being involved in negations is such as Aristotle argues is required by the Platonic ἓν ἐπὶ πολλῶν, did he not, nevertheless, admit negative ideas? In the section of the *Sophist* where negation is explained he speaks of the "not beautiful," the "not large," the "not just," as real entities all of which are "parts" of the φύσις θατέρου (*Sophist* 257 D-258 A) So it might appear that, as Aristotle says, the negations "A, B, and C are not x" must lead the Platonists to posit an idea of not-x in which the heterogeneous subjects A, B, and C participate; but "not x" ("not beautiful," for example), which Plato calls a μόριον τῆς θατέρου φύσεως, is not, however, a single idea. By communication in the idea of difference, in which every idea communicates, each idea is different from *every* other, taken singly, and from *all* others, taken together (*Sophist* 259 B); and "not x" as a μόριον τῆς θατέρου φύσεως is simply all the entities which are *not* the entity x, just as x

[172] One might anticipate here an argument on the part of those who would accept Philippson's thesis (see note 145 *supra*); they might contend that this is additional proof that the περὶ ἰδεῶν was prior to the *Sophist* (and so probably prior to the *Parmenides* also) which was then written with an eye to just this kind of objection Apart from the fact that in order to argue thus Philippson would have to admit that *Metaphysics* 990 B 11-17 = 1079 A 7-13 comes from the περὶ ἰδεῶν (as all the evidence that we have shows that it does), we have seen in the passages of the previous chapter above cited that this interpretation of τὸ μὴ ὄν occurs in conjunction with obvious references to the *Sophist*, which proves that—even though this interpretation may have been advanced as an objection by Aristotle and others before that dialogue was written—Aristotle maintained his interpretation in the face of Plato's exposition and even referred to the *Sophist* itself for confirmation of it. Obviously, then, the mere fact that a criticism of Aristotle's is "answered" in a dialogue of Plato's does not constitute any proof that it was written or advanced *prior* to the writing of the dialogue.

itself, not being any or all of these other entities, is also a μόριον τῆς θατέρου φύσεως In the *Politicus* where Plato introduces a warning against the inaccurate use of diaeresis we have observed that he means to restrict the identification of "divisions" and ideas to such divisions as coincide with objectively real units and that there is in this connection evidence for a debate among his students as to the formal determination of this distinction, a debate which resulted in the rejection by some Platonists of ideas of artefacts and in the restriction by Aristotle of "natural substance" in the strict sense to "organic units." In the same section of the *Politicus*, introduced by the canon τὸ μέρος ἅμα εἶδος ἐχέτω (262 B) and culminating in the formulation that every εἶδος is a μέρος but a μέρος need not be an εἶδος (263 B), Plato points out that merely negative terms do not correspond to single ideas even in those cases where a positive name happens to be applied to the whole group of things included in the negation (262 D-E, 263 C-D), if there is no characteristic common to the members of the group save only that they are all different from some one entity, it is clear that the group is not a "natural unit" and so not an εἶδος. This, however, is exactly the character of "not x"; it indicates all of the entities other than x, which—though different from one another—are also all different from x (cf *Sophist* 257 B 6-7· μὴ μέγα means τὸ σμικρόν no more than it does τὸ ἴσον) The "one idea" in which all of these entities (as well as the entity x) communicate is "the idea of difference," for which reason any group of ideas may be said to be "a part of the idea of difference," because the εἶδος τοῦ μὴ ὄντος is the φύσις θατέρου κατακεκερματισμένη ἐπὶ πάντα τὰ ὄντα πρὸς ἄλληλα and its objective existence consists in the *contrast* of any group of entities with some *definite* entity Aristotle's criticism rests not alone upon his interpretation of Plato's μὴ ὄν as absolute non-being but also upon his belief that a μόριον of this μὴ ὄν must then be a single idea which is a *species* of non-being, whereas Plato makes it clear that a μόριον in his sense need not be either a "genus" or a "species." Obviously the Platonic conception of the relationship among ideas does not coincide with the "logical hierarchy"

which Aristotle supposes that it must represent (see also pages 43-48 *supra*) [174]

This canon, however, that a merely negative term does not correspond to a single idea, would raise a practical difficulty analogous to that which has been noticed in regard to "natural units" Since the "not beautiful," the "not large," the "not just" of the *Sophist* are not identical with ugliness, injustice, and smallness respectively (for the negative, as Plato says, does not signify the contrary), ideas of ugliness, injustice, smallness, and of the contraries of courage, sobriety, and liberality are not eliminated by the doctrine of the *Sophist* so long as such terms are considered to have *positive* meaning The term "barbarian,"

[174] My analysis of this part of the *Sophist* is in most respects in accord with that of Cornford in his book, *Plato's Theory of Knowledge*, my indebtedness to which is probably greater than I can myself estimate As the reader will observe, however, I disagree with Cornford on one important point He argues that the μόριον θατέρου must mean "a part of the Different" (i e that which is different") "Thus 'the not Beautiful' is 'a part of the Different,' though not of Difference itself" (*op cit*, pp 293-4) This he does because he thinks that "a Form can have parts in two senses," which senses amount to what Aristotle calls "genus" and "species" (cf Cornford's example of figure and triangle with *Metaphysics* 999 A 9-12, cf *Metaphysics* 1023 B 12-25), and then contends quite rightly that "the not-Beautiful" is not a "part of Difference" in either of these senses. That Plato, however, calls "not x" a μόριον of the *idea* of difference is, I think, incontestable (*Sophist* 258 E 2 where μόριον αὐτῆς refers to τὴν θατέρου φύσιν which is τὸ εἶδος τοῦ μὴ ὄντος and this is τῶν πολλῶν ὄντων εἶδος ἕν [258 C 3]; cf 257 D 4-5· τὰ τῆς θατέρου φύσεως μόρια μιᾶς οὔσης and note that the θατέρου φύσις which κατακεκερματίσθαι φαίνεται [257 C 7, cf 258 E 1] is the θατέρου φύσις which is ἐν τοῖς εἴδεσιν and which, pervading all the ideas, makes ἓν ἕκαστον ἕτερον διὰ τὸ μετέχειν τῆς ἰδέας τῆς θατέρου [255 D 9-E 6, cf 256 A 10-B 4]). It seems obvious, then, that the disjunction, "either genus or species," does not hold for a μόριον τοῦ εἴδους and this is further substantiated by the fact that Plato does not make any ontological distinction between "genus" and "species" (see page 46 *supra*) In some cases the "parts" of an idea correspond to Aristotle's logical "species," as, for example, the ideas which are "parts" of Knowledge (*Sophist* 257 C 7-D 2), but that does not mean that Plato thought of the ontological relationship as one of genus and species, the fact that the "fractioning" of Knowledge is used to illustrate the "fractioning" of τὸ μὴ ὄν, although in the latter case the parts are not "species of difference," indicates that even in the former case he did not think of the relationship as of this nature This, however, is just the source of Aristotle's misinterpretation, namely that "not x" as a μόριον must be a "species of non-being"

however, although as meaning simply "other than Greek" it does not stand for a single idea, may itself as a moral term have a single positive meaning, in which case it is not simply a negation but must designate a single idea In such cases, then, the question arises with regard to each term considered. has it positive content or is it merely a negation of some positive entity and so "a part of the nature of difference"? In the realm of phenomena the problem is still further complicated by the possibility of different "degrees of participation" in a single idea, different grades of approximation, for each of which infinite variations and deviations it is neither necessary nor possible to assume a distinct idea, since the variations themselves are not distinct. Moreover, since no phenomenal particular can *exactly* represent an idea, all participation is in some degree "deviation"; and in the case of any phenomenon the question arises as to whether it is merely a "deviation," a falling short of a definite idea, or the representation of a distinct idea other than that from which it might be supposed to deviate [115] It is possible

[115] For the ideas as fixed terms, the standards which phenomena approximate, see pages 214-220 *supra* Cf the varying degrees of participation in justice and injustice and the concomitant admission that the *absolutely* just or unjust man cannot exist in the phenomenal world (*Republic* 472 B 473 A, cf 617 E *ἀρετὴ . . ἣν τιμῶν καὶ ἀτιμάζων πλέον καὶ ἔλαττον αὐτῆς ἕκαστος ἕξει*). In the differences of odor there are no fixed types at all, *τὸ γὰρ τῶν ὀσμῶν πᾶν ἡμιγενές* (*Timaeus* 66 D) On the other hand, the various *εἴδη χολῆς* are established by the fact that each kind has an *ἴδιος λόγος* (*Timaeus* 83 C) All phenomena, however, fall far short of the ideas toward which they strive (cf Shorey, *What Plato Said*, p 528) and to which we refer them as standards (*Phaedo* 74 D-E, 75 B, note that this is true of all things *οἷς ἐπισφραγιζόμεθα τὸ "αὐτὸ ὃ ἔστι"* [75 C-D]), and this must be so, for if the likeness were identical with the model in all respects it would not be a likeness (*Cratylus* 432 C-D). The possibilities which this doctrine has in regard to the "problem of evil" are obvious, for in this sense it can be said that the whole phenomenal world *as such* is involved in "evil" because it must fall short of the perfect *οὐσία* of the ideas This "negative" aspect of evil Plato has in mind at *Theaetetus* 176 A (*ἀλλ' οὔτ' ἀπολέσθαι τὰ κακὰ δυνατόν . οὔτ' ἐν θεοῖς αὐτὰ ἱδρῦσθαι, τὴν δὲ θνητὴν φύσιν καὶ τόνδε τὸν τόπον περικολεῖ ἐξ ἀνάγκης*) and *Politicus* 273 B C (*τούτων δὲ αὐτῷ τὸ σωματοειδὲς τῆς συγκράσεως αἴτιον, τὸ τῆς πάλαι ποτὲ φύσεως σύντροφον, ὅτι κολλῆς ἦν μετέχον ἀταξίας πρὶν εἰς τὸν νῦν κόσμον ἀφικέσθαι. παρὰ μὲν γὰρ τοῦ συνθέντος πάντα καλὰ κέκτηται· παρὰ δὲ τῆς ἐμπροσθεν ἕξεως, ὅσα χαλεπὰ καὶ ἄδικα ἐν οὐρανῷ γίγνεται, ταῦτα ἐξ ἐκείνης αὐτός τε ἔχει καὶ τοῖς ζῴοις ἐναπεργάζεται*); in conjunction with the *πλανωμένη αἰτία* or *ἀνάγκη* of the

to understand how from this point of view the tendency among some Platonists to interpret an ever increasing number of terms as bare negations and an increasing number of phenomena as

Timaeus (47 E-48 B, cf 30 A, 53 B, 56 C) and the statement of the *Philebus* (25 E-26 B) that τὰ καλὰ πάντα are the result of the imposition of limit on the unlimited this might seem to indicate that Plato held *all* evil to be purely negative It is, however, only one aspect of evil, and Plato never abandoned the conviction that injustice, slavishness, impiety, disease are concepts with positive meaning Ideas of evil appear in the *Republic* (402 C, 476 A καὶ περὶ δικαίου καὶ ἀδίκου καὶ ἀγαθοῦ καὶ κακοῦ καὶ πάντων τῶν εἰδῶν πέρι ὁ αὐτὸς λόγος, αὐτὸ μὲν ἓν ἕκαστον εἶναι . . , cf *Euthyphro* 5 D) and are referred to in the *Theaetetus* (186 A καλὸν--αἰσχρόν, ἀγαθὸν—κακόν), furthermore, in the *Theaetetus*, almost immediately after the passage quoted above as expressing the negative aspect of evil (176 A), Plato refers to παραδείγματα ἐν τῇ φύσει ἑστῶτα, τοῦ μὲν θείου εὐδαιμονεστάτου, τοῦ δὲ ἀθέου ἀθλιωτάτου (176 E; cf the βίων παραδείγματα of *Republic* 617 D-618 A and *Republic* 592 B ἐν οὐρανῷ ἴσως παράδειγμα ἀνάκειται τῷ βουλομένῳ ὁρᾶν καὶ ὁρῶντι ἑαυτὸν κατοικίζειν) The idea of νόσος, which in *Phaedo* 105 C appears along with those of heat and oddness, should have disappeared in the *Timaeus*, had Plato come to the conclusion that all evil is negative, yet the various diseases are said to have definite constitutions much like living organisms (*Timaeus* 89 B-C), so that Plato must have held them to be "natural units," of which there would then be ideas, and not mere "deviations" or negations Moreover, in the *Sophist* (251 A) as examples of multiple predications of a single subject κακίαι and ἀρεταί appear along with σχήματα and μεγέθη, since Plato's solution of this problem consists in the theory of participation in the ideas, this amounts to asserting ideas of κακίαι. So in the *Laws* (964 C) the legislator must know ἣν δύναμιν ἔχει κακία τε καὶ ἀρετή, and the most exact σκέψις θέα τε περὶ ἑτουοῦν is said to be τὸ πρὸς μίαν ἰδέαν ἐκ τῶν πολλῶν καὶ ἀνομοίων δυνατὸν εἶναι βλέπειν (965 C), all things that have a λόγος as well as a mere name are objects of this method (964 A) which is in fact applied to ἐπιθυμία in the *Philebus* (34 E πρὸς τί ποτε ἆρα ταὐτὸν βλέψαντες οὕτω πολὺ διαφέροντα ταῦθ' ἑνὶ προσαγορεύομεν ὀνόματι; [cf *Topics* 147 A 5-11, page 8 *supra*]). It is apparent that Plato never came to believe that all "evil" can be explained away as merely negative, whether as the failure of phenomena adequately to represent the ideas or as "disorderly motion in the soul." These have their part, but there remain "evils" of a positive and objective nature which have a λόγος and for which there must, consequently, be ideas, although of these too there will be different degrees of phenomenal manifestation. That these differences are unlimited does not signify that the entity manifested is itself indeterminate, on the contrary, the indeterminateness characteristic of phenomenal process is itself an indication of the stable and determinate idea to which these variations are approximations So the unlimited variations and intensities of pleasure and pain are not to prevent us from positing determinate ideas of pleasure and pain any more than the characteristic insatiety of appetite forbids the assumption of an idea of ἐπιθυμία.

"deviations from the normal" would lead to the restriction of the sphere of ideas in a fashion similar to that which resulted from an increasingly stricter interpretation of the canon of "natural units" So all ideas of evil would be rejected on the ground that evils are simply negations or aberrations Such was the dogma of the later school and there are indications of a tendency in this direction among Platonists contemporary with Aristotle, although it is apparent that there was opposition to this extension of the sphere of negation [170] The tendency and

[170] For Aristotle's identification of Platonic "matter" and evil and the divergent explanations that evil is "caused by matter" or is the result of the contrariety of which the world consists see note 62 *supra* The last of these interpretations is the extension of the "negative aspect" to cover all evil Plotinus puts the doctrine succinctly in *Enn*, V, 9, 10 (*κακοῦ γὰρ οὐδενός* [scil. *ἐκεῖ*]· *τὸ γὰρ κακὸν ἐνταῦθα ἐξ ἐνδείας καὶ στερήσεως καὶ ἐλλείψεως, καὶ ὕλης ἀτυχούσης πάθος καὶ τοῦ ὕλῃ ὡμοιωμένου*), cf *Enn*, I, 8 (n b I, 8, 1 *εἶδος δὲ τὸ κακὸν πῶς ἂν τις φαντάζοιτο ἐν ἀπουσίᾳ παντὸς ἀγαθοῦ ὑδαλλόμενον*,) Syrianus says (*Metaph*, p 107, 8 12) *οὔτε γὰρ τῶν κακῶν ἡ αἰσχρῶν* (*scil φασὶν ἰδέας εἶναι*), *ἐπειδὴ στερησει μᾶλλον καὶ ἀποστάσει τῶν εἰδῶν ταῦτα παρυφίστανται τῇ φύσει, διὸ καὶ παρὰ φύσιν ἔχειν λέγεται οὔτε τῶν ἀποφάσεων, ἀναιρετικὰ γὰρ ταῦτα τοῦ ὅρου καὶ τοῦ πέρατος τοῦ παρὰ τῶν εἰδῶν ἐνδιδομένου τοῖς πᾶσι, καὶ ἅμα ὑλικόν ἐστι μᾶλλον τὸ τῆς ἀορισταις πάθος ἤπερ εἰδητικόν* The assimilation of all evil to bare negation is obvious (cf also Proclus, *In Parmenidem*, V, 62 [Cousin] *ἀλλὰ δέδεικται μηδὲν τῶν κακῶν ἐκκεῖσθαι ἀπογεννώμενον· πᾶς δὲ ῥύπος καλία τίς ἐστιν ἐκείνου πάντως, ᾧ παρυφέστηκε διὰ τοῦτο αὐτὸ οὐκ ἐκεῖθεν ταῦτα, διότι ἐκβάσεις εἰσὶ καὶ στερήσεις τῶν ἐκεῖθεν ὑποστάντων· κτλ*, *In Timaeum*, III, p. 303, 15 ff) Hippolytus (*Refut*, I, 19, 23 [*Dox Graec*, p 570, 3-5]) attributes to Plato the doctrine that the nature of evil is not self-subsistent but *κατ' ἐναντίωσιν καὶ παρακολούθησιν τοῦ ἀγαθοῦ γενέσθαι ἢ καθ' ὑπερβολὴν ἢ κατὰ μείωσιν*, and Albinus ([Alcinous], *Didaskalikos*, IX, p 163 [Hermann]), saying that most of the followers of Plato reject ideas of *τὰ παρὰ φύσιν* and *τὰ εὐτελῆ*, gives as examples of the former *πυρετός* and *χολέρα* and of the latter *ῥύπος* and *κάρφος* (for the opinions of other Platonists of the 1st and 2nd centuries see Witt, *Albinus and the History of Middle Platonism*, p. 121). It is impossible to say in how far this later tendency may have been due to the influence of Aristotle's own doctrine of evil as *ἔκστασις*, the incomplete information of material (cf *Physics* 246 A 13-17, 247 A 2-3, *Metaphysics* 1021 B 20-28, *De Anima* 430 B 21-23 [cf Themistius, *De Anima*, p 111, 23-24], see note 62 *supra*) The extension of negative terms in the Academy of Aristotle's time, however, is illustrated by the fact that some Platonists, among them Speusippus, treated *διαιρετόν* as a negation equivalent to *ἀόριστον*, which was a term applied to "the imperfect"; and this is the more significant in view of the Academic definition of evil as *τὸ διαιρετῷ εἶναι* (see pages 36 38 *supra* on *Anal. Post.* 92 A 20-27) There is evidence to show that Xenocrates characterized his

its inherent difficulties are manifested in Aristotle's own doctrine of privation [177] This term " privation " indicates the negative aspect of reality, the absence of a determinate form from a determinate substrate, it is *per se* non-being, whereas the substrate is only accidentally non-being (*Physics* 191 B 13-16, 192 A 3-6), and consequently in considering the principles of change one can disregard privation since the positive form can produce change by its absence as well as by its presence [178] This con-

" second principle " as privative (see Appendix I on Stobaeus, *Eclog.*, I, 10, 12), and it is not impossible that he explained evil as the result of the pluralization of form, that is as the negation of unity (see note 29 *supra* for his designation of the phenomenal world as *μεριστόν*), which Aristotle then represented as the identification of evil with the " material principle " (see Appendix I on *Metaphysics* 1091 B 30-32 and note 62 *supra*)

The passage of Albinus cited above indicates, however, that not all Platonists rejected ideas of what he calls *τὰ παρὰ φύσιν* and *τὰ εὐτελῆ*, and Proclus himself, who denies that there are ideas of evils which he tries to explain as negation, admits that some Platonists assumed such ideas and argued that only so could knowledge of these things be accounted for (*In Parmenidem*, V, 63 [Cousin] = p 646, Stallbaum *ἐὰν γὰρ οὕτω λέγωμεν, οὔτε τῶν κακῶν ἰδέας εἰσοίσομεν, ὥς τινες τῶν Πλατωνικῶν, οὔτε μόνα τὰ ἀμείνω γιγνώσκειν τὸν νοῦν ἐροῦμεν, ὡς ἕτεροι διαδοξάζουσι*) The seventh Platonic *Epistle* lists among those objects of which there are ideas " every character in souls and *ποιήματα καὶ παθήματα σύμπαντα* " (342 D). To this the same remark as was made above (see note 150 *supra*) is pertinent If the *Epistle* is genuine it is an emphatic assertion by Plato at the end of his life that the ideas are not to be restricted, if it is spurious, it is still evidence for an Academic party that denied such a restriction on the part of Plato.

[177] Privation is for Aristotle a species of contradiction, and the " primary privation," the extreme form of privation, is contrariety (*Metaphysics* 1055 A 33-B 29, cf 1022 B 22-1023 A 7 [n. b 1022 B 27-31], 1004 A 9-16, 1046 B 14-15, 1063 B 17-18). On the doctrine of *στέρησις* see Hamelin, *Le Système d'Aristote*, pp. 131-3, 136 9, 142-5, and especially Calogero, *I Fondamenti della Logica Aristotelica*, pp 97-117 and Faust, *Der Moglichkeitsgedanke*, I, pp 104 138

[178] *Physics* 191 A 4-7; cf Simplicius, *Phys*, p 221, 22-27 (*εἰ γὰρ ἡ στέρησις οὐδὲν ἄλλο ἢ ἀπουσία τοῦ εἴδους ἐστὶν ἐν τῷ πεφυκότι, ἱκανὸν φαίη ἂν τις εἶναι τὸ εἶδος τῇ μὲν παρουσίᾳ τὸ εἶναι ποιεῖν, τῇ δὲ ἀπουσίᾳ τὸ μὴ εἶναι καὶ τὴν στέρησιν καὶ τὴν φθοράν, τὸ μὲν καθ' αὑτό, τὸ δὲ κατὰ συμβεβηκός*) Robin (*Idées et Nombres*, p 184) strangely takes it to be " matter " that is excluded

" c'est la Matière, non être par accident, qu'on peut même, à ce titre, exclure du nombre des principes " On this rests his attempt to show that Plato really posited an indeterminate and a determinate non being, the former analogous to Aristotle's matter, the latter to his privation, that it was the former, not the latter, that he excluded from the world of ideas just as Aristotle did from the principles;

ception of privation enormously extends those terms which are explained as indicating merely the negation of a positive term, the absence of a determinate form (*στέρησις = ἀπουσία εἴδους*: *Physics* 191 A 5-7, 195 A 11-14; *Metaphysics* 1013 B 11-16, 1032 B 2-6); inequality, unlikeness, evil, plurality, disease, black, cold, rest, heaviness, and even earth are treated as privations (*Metaphysics* 1055 B 18-20, 1004 A 9-22, 1070 B 28 [cf 1032 B 3-4]; *Meteorology* 374 B 12-15; *De Anima* 430 B 20-23; *De Generatione* 318 B 16-18; *De Caelo* 286 A 25-28 [cf *De Generatione* 319 A 14-17]; *De Gen. Animal.* 743 A 36),[179] and change *κατὰ στέρησιν* is considered to be degeneration of the substrate by negation of its proper form, not the acquisition of a contrary form which is as much a positive term as the one that has receded from the material (*Metaphysics* 1044 B 29-1045 A 6 [*τοῦ μὲν καθ' ἕξιν καὶ κατὰ τὸ εἶδος ὕλη, τοῦ δὲ κατὰ στέρησιν καὶ φθορὰν τὴν παρὰ φύσιν*; so vinegar and wine both come from water, but the former by further *loss* of form, the latter by *gain*], cf. *Physics* 246 A 13-247 A 3, *Metaphysics* 1021 B 14-28). This conception of privation as purely negative is, however, inconsistent with Aristotle's theory of matter as the identical substrate of contraries which have equal reality as actualizations of a single potentiality, and he does in fact insist that privation in the strict sense is not mere negation (*Metaphysics* 1004 A 13-

and that Aristotle confused the two in Plato's system, thereby supposing that there was an absolute or indeterminate non-being in the world of ideas. Since, however, it is privation, not matter, that Aristotle excludes from the principles of change, the analogy breaks down. If by this exclusion Aristotle intends to impugn anything in Platonic doctrine, it is the assumption of ideas which he holds to be simply negations, negations that must be ideas by reason of the *ἓν ἐπὶ πολλῶν* but which are in fact only the absence of determinate forms.

[179] Although in *Metaphysics* 1004 A 9-22 plurality is explained as the negation or the privation of unity and in 1055 B 18-20 inequality is the privation of equality and unlikeness of likeness, yet in 1054 A 26-32 the unit is said to get its meaning and explanation from its contrary, the indivisible from the divisible *διὰ τὸ μᾶλλον αἰσθητὸν τὸ πλῆθος εἶναι καὶ τὸ διαιρετὸν ἢ τὸ ἀδιαίρετον, ὥστε τῷ λόγῳ πρότερον τὸ πλῆθος τοῦ ἀδιαιρέτου διὰ τὴν αἴσθησιν.* Moreover, since the same, the like, the equal belong to the unit while the other, the unlike, and the unequal belong to plurality, presumably the former are known by reference to what in 1004 A 9-22 and 1055 B 18-20 are said to be their privations. So in *De Anima* 430 B 20-21 the point and *τὸ οὕτως ἀδιαίρετον* are said to be explicable *ὥσπερ ἡ στέρησις.*

16 [cf Ross, *ad loc.*], 1022 B 24-31, 1055 B 7-11) but is itself a form (*Physics* 193 B 19-20; *Metaphysics* 1019 B 3-10 [cf. Ross, *ad loc.*], 1058 B 26-28 [τὰ ἐναντία ἕτερα τῷ εἴδει, see note 120 *supra*], 1070 B 10-15, 1071 A 8-11 [cf Ross, *Metaphysics*, II, p. 363]; see pages 89-90 *supra*). Quite apart from the exigencies of Aristotle's theory of change which requires that he treat στέρησις as itself a determinate form, it is obvious that whether a privation is to be considered as essentially a negation or as having positive content will vary with the particular circumstances in which the privation is manifested; and Aristotle's recognition of this fact appears in his statement that in those cases in which the substrate is hot κατὰ πάθος cold is not a στέρησις but a positive "nature" (*De Part. Animal.* 649 A 17-20). In such a case it is clear that one term cannot be known merely by reference to its "contrary" as might be the case as long as the privation is considered to be merely negative, even though in the latter case the formula applies to the privation only accidentally but to the positive term *per se* (*Metaphysics* 1046 B 7-15, *De Anima* 430 B 20-23, cf. Rodier, *Traité de l'Ame*, II, pp. 156 f on 411 A 2-7)

The real problem for the Platonists was the same as it was for Aristotle, to determine whether a term which in certain circumstances may appear to be a negation is merely that or is a natural unit of positive content, for the ἓν ἐπὶ πολλῶν required them to posit ideas of bare negations no more than it required him to assume that a bare negation is an εἶδος just because he admitted that it does show the common predicate to be other than the particulars of which it is predicated Nevertheless, debate concerning the character of certain terms could serve as the basis for criticism of Platonic doctrine as is shown by Aristotle's attempt to prove that the Platonists adopted as a "principle" what is in fact a "privative negation" (*Metaphysics* 1055 B 30-1056 B 2, cf. 1056 B 3-1057 A 17 [see note 60 *supra*]). At the same time it appears to have been a settled method of Aristotle's to attack the theory of ideas by arguing that the reasons for assuming ideas of "substances" would require the assumption of ideas of qualities, quantities, etc. and that, in that case, there must be ideas of mere negations, which is absurd. Thus later he says that in cases other than those of

substances "the thought is a unity" so that the ideas cannot be limited to those of substances (*Metaphysics* 990 B 22-26; Alexander, *Metaph*, p 88, 17-20 [τὸ γὰρ ἓν ἐπὶ πολλῶν κατηγορεῖσθαι οὐκ ἐν οὐσίᾳ μόνον ἀλλὰ καὶ ἐπὶ τῶν συμβεβηκότων], see pages 239-240 and note 144 *supra*). With this should be compared *Metaphysics* 1069 A 21-24 where it is contended that quality, quantity, etc. cannot exist in the full sense or else not-white and not-straight would so exist also, since we say that not-white is (cf. 1017 A 18-19· οὕτω δὲ λέγεται καὶ τὸ μὴ λευκὸν εἶναι, ὅτι ᾧ συμβέβηκεν ἐκεῖνό ἐστιν, the existence of τὸ μουσικόν being "accidental" in the same way) and *Anal. Post.* 85 B 18-22 where Aristotle contends that the single universal has a higher degree of existence than the particulars but that the unity which it indicates is no reason for assuming a *separate* universal any more in the case of substance than in that of the other categories (see page 72 *supra*)

C "The Object of Thought"

The argument that there must be ideas apart from sensible particulars because the object of thought must be an entity and cannot be any of the particulars (page 229 *supra*) is essentially the same as the second of the arguments from the sciences (pages 227 and 235 *supra*), the two differ only in the way in which they establish the premise that the object concerned cannot be a particular, the latter by pointing out that the objects of knowledge are ὡρισμένα whereas the particulars are ἄπειρά τε καὶ ἀόριστα, the former by the argument that even when the particulars have perished the object of thought remains the same In similar fashion the argument of the ἓν ἐπὶ πολλῶν establishes the fact that the common predicate is not identical with any of the particulars of which it is predicated by pointing to the eternal identity of the predicate in the face of the instability of the particular subjects (Alexander, *Metaph.*, p. 80, 11-14; page 228 *supra*), the connection of these two arguments is further emphasized by the fact that in explaining Aristotle's reference to the canon τὸ νόημα ἓν (990 B 25) Alexander gives an argument which represents the object of thought as the

common predicate of a multiplicity and asserts that this remains the object of thought even when the particulars no longer exist (*Metaph.*, p 88, 7-8 ὅ τε γὰρ ἀπὸ τοῦ νοεῖσθαί τι κοινὸν ἐπὶ πλείοσι, νοεῖσθαι δὲ καὶ μηκέτι ὄντων τῶν καθ' ἕκαστα). It appears, then, that this argument is simply a special form of the proof that the common predicate which is the object of knowledge is other than the particular sensibles since the object of knowledge remains unaffected when the particulars perish, it cannot have been any of the particulars when they existed

Aristotle's contention that consistency would require the Platonists in accordance with this argument to posit ideas of everything of which there may be a mental image, and so of individuals and even of non-existent fancies (page 229 *supra*), depends upon the isolation of the argument that supports the premise and the neglect of the fact that at the very beginning the objects concerned were limited to universals (ἐπειδὰν νοῶμεν ἄνθρωπον ἢ πεζὸν ἢ ζῷον), that this isolation is illegitimate is indicated by the absence of the νοεῖν τι φθαρέντος as a separate argument in the second critique (*Metaphysics* 990 B 24-27) where according to Alexander's commentary it is just one element in the argument referred to by the rubric τὸ νόημα ἓν The argument neither presumes nor pretends to prove that every mental image which survives the destruction of the particular must correspond to an idea but only that the *universals* which are thought cannot be identical with particulars since they do not depend upon the existence of any particular Aristotle, however, presumes that the persisting mental image which is the object of memory must be treated in the same way as the object of thought, so that if the latter by being distinguished from the particulars is made an idea the former must be an idea also A similar misconception has already been noticed in regard to " the argument from memory " (see Appendix III), according to it Plato would have maintained that only ideas can be the objects of memory, so that everything remembered must be an idea, although he himself speaks explicitly of memory-images of particulars as well as of ideas The fact is that for Plato not all memory but only the knowledge of those universals to which we refer the phenomena that are never identical with them is " memory of the ideas " (*Phaedo* 73 C-76 E). Inasmuch, then, as he recognizes

the possibility of retaining a mental image of a phenomenal particular and also of having a "false" mental image, it is not possible that he should have supposed the mere retention of such an impression after the disappearance of the particular to be evidence of the existence of ideas. The "memory image" of a particular sensible can survive the particular itself but it is not independent of that particular, for it is simply the retention of the affection which reaches the mind from the phenomenal particular by mediation of the body (*Philebus* 33 D-34 B); it is, therefore, not really the same in meaning after the particular of which it is the image has perished, whereas the intension of the object of thought remains identical irrespective of the existence or change of any of the particulars.[180] In the argument as reported by Alexander there is no basis for Aristotle's supposition that the Platonists sought to establish the existence of ideas from the persistence of a mental image of the *particular*.

In *Metaphysics* 997 B 32-34 the argument *νοεῖν τι φθαρέντος* is implied in Aristotle's contention that the objects of mensuration cannot be the sensible, perishable magnitudes, because, if they were, the art of mensuration would perish when these sensibles disappear. In other words, since the objects of mensuration survive the particulars, they must be other than these particulars (cf. Alexander, *Metaph.*, p. 199, 27-39). This, of course, does not mean for Aristotle that these objects are "separate entities" but only that they are abstractions (cf. *Anal. Post.* 87 A 33-37, *Metaphysics* 1077 B 17-1078 A 31); and it appears from his own use of the argument that his proper objection to it would have been not that it requires the assumption of ideas of individual perishables but—as in the case of the two preceding arguments—that, while it shows that the objects of knowledge

[180] The persistence of the memory image of the perishable individual does not prevent Aristotle from asserting that the passing of the individual from actual perception abolishes all actual "knowledge" of it (*Metaphysics* 1036 A 2-9, 1040 A 2-5, *Anal. Prior* 67 A 39-B 3, *Topics* 131 B 21-23); the universal formula, however, by means of which the object is known remains eternally the same (*Metaphysics* 1036 A 8 [cf. 999 A 28-29], 1047 A 2), so that it must be the connotation of the mental image which is affected by the passing away of the sensible individual.

are "other" than the particulars, it does not prove that they are separate ideas.[181] The question then turns on the basic disagreement between Aristotle and Plato, the possibility of "abstracting" from the particulars an immanent universal (see pages 73-80 *supra*).[182]

D "The More Precise Arguments."

It has already been observed that Alexander treats this reference in a fashion analogous to the foregoing and explains the term ἀκριβέστεροι (990 B 15 = ἀκριβέστατοι, 1079 A 11) as indicating arguments which appear to prove not merely that the common predicate is other than the particulars but that it is the παράδειγμα of these sensibles (Alexander, *Metaph.*, p. 83, 17-22 [pages 230-232 *supra*]). Inasmuch as he says that in the περὶ ἰδεῶν Aristotle used the "third man" argument here mentioned (*Metaph.*, p. 85, 11-12) and there is every reason to believe that the argument cited in explanation of the first part of this sentence (οἱ μὲν τῶν πρός τι ποιοῦσιν ἰδέας) comes from the same source (see notes 135 and 137 *supra*), one might suppose that his comment on ἀκριβέστεροι also was derived from the περὶ ἰδεῶν. This conclusion is untenable, however, for the term is applied not only to the arguments which "make ideas of relations" but also to those which τὸν τρίτον ἄνθρωπον λέγουσιν, as Alexander himself recognizes (*Metaph.*, p. 85, 5-8), and for these the example which he gives is simply the ἓν ἐπὶ πολλῶν (see pages 233-234 *supra*) Since this was the Platonic argument from which Aristotle said in the περὶ ἰδεῶν that the "third man" follows and since Alexander cannot make his explanation of ἀκριβέστεροι apply to the "arguments which involve the 'third man'," it is clear that the distinction made by Alexander between the ἀκριβέστεροι and the preceding arguments does not exist and that he invented it in the absence of an explanation of the term in his source, probably induced thereto by the fact

[181] This is in fact the conclusion of the L version of Alexander's commentary on this section ὥστε οὐδὲ ὁ τοιοῦτος λόγος ἰδέας εἶναι συλλογίζεται ἀλλά τι ἕτερον παρὰ τὰ καθέκαστα τούτῳ δὴ καὶ τὸ καθόλου τὸ ἐν τοῖς καθέκαστα ἁρμόζει, καὶ οὐκ ἐξ ἀνάγκης ἰδέαν εἰσάγει.

[182] See Appendix V.

that the "paradeigmatic" character of the idea is especially stressed in this one argument which concludes with the existence of an idea of a "relation."[183] Since, however, the "arguments from the sciences" also result in ideas of "relations" (Alexander, *Metaph.*, p. 79, 13-15; cf p 83, 22-24), Aristotle cannot mean that this result distinguishes the ἀκριβέστεροι from the arguments mentioned in the preceding sentence; nor can he mean to *restrict* the difficulty of the "third man" to arguments other than the foregoing, since he believes that *whenever* a common predicate is set up as an individual entity this difficulty is involved (*Soph. Elench.* 178 B 36-179 A 10, *Metaphysics* 1038 B 34-1039 A 3) and this *all* the arguments do that try to establish the existence of ideas The ἀκριβέστεροι τῶν λόγων seem to be just the more "precise" in the sense of the more "abstractly logical" (cf. Ross, *Metaphysics*, II, p. 424 on 1080 A 10) among the arguments already mentioned, of which many variations were given in the περὶ ἰδεῶν and among which that reported by Alexander as ὁ τῶν πρός τι κατασκευάζων ἰδέας was undoubtedly one[184] Here the term ἀκριβέστεροι probably ex-

[183] Nevertheless, the first form of the "arguments from the sciences," as Alexander gives it, also concludes that the object of knowledge is a παράδειγμα (Alexander, *Metaph*, p 79, 7 8), so that, if his report of this argument truly represents the expression of it in the περὶ ἰδεῶν, his explanation of ἀκριβέστεροι would not distinguish the example which he gives from the preceding arguments

The fact that Alexander's explanation of ἀκριβέστεροι is wrong does not, of course, imply that the argument which he reproduces and the refutation of it do not come from the περὶ ἰδεῶν His expression indicates that this was not the *only* example there given of an argument which established ideas of relations (*Metaph*, p 83, 17· εἰτ μὲν οὖν οὗτος λόγος .), it was the one, however, which seemed to give him the opportunity to explain ἀκριβέστεροι and that apparently is why he chose to reproduce it rather than the others, but the objections which he gives could be urged against any argument that resulted in ideas of "relations"

[184] It seems to me that τῶν λόγων in the phrase οἱ ἀκριβέστεροι τῶν λόγων must refer to the λόγοι which are discussed in the preceding sentence Robin (*Idées et Nombres*, p 19, n 16) apparently accepts Alexander's interpretation, which is sufficiently refuted above Heinze (*Xenokrates*, p 55, n 2) takes the phrase as a reference to the arguments of *opponents* of the Platonists and supposes Aristotle to mean that "the proofs of the opponents lead to ideas of relatives while the Platonists assume no ideas for these" Aristotle, however, a little later takes αὐτοδιπλάσιον as a typical Platonic idea (*Metaphysics* 990 B 31-34) and in the περὶ ἰδεῶν certainly reported arguments of the *Platonists* which

cludes the νοεῖν τι φθαρέντος which, as has been observed, does not reappear as a separate argument in the second critique (990 B 24-27, page 273 *supra*)

expressly established ideas of "relations" Furthermore, as Robin says (*loc. cit*), it would be strange for λόγοι in the preceding sentence to mean arguments of the Platonists and here those of their opponents A passage not mentioned by Heinze (1080 A 9-11) might at first seem to favor taking the term as a reference to objections of Aristotle At the end of the critique in M, the doublet of that in A, he says ἀλλὰ περὶ μὲν τῶν ἰδεῶν καὶ τοῦτον τὸν τρόπον καὶ διὰ λογικωτέρων καὶ ἀκριβεστέρων λόγων ἔστι πολλὰ συναγαγεῖν ὅμοια τεθεωρημένοις. This is undoubtedly a reference to the treatment in the περὶ ἰδεῶν (cf Syrianus, *Metaph*, pp 120, 33-121, 7 and H Karpp's article [see Appendix II]), and, if he calls *his* objections in that work ἀκριβέστεροι λόγοι, the phrase here may mean the same thing The combination λογικωτέρων καὶ ἀκριβεστέρων shows, however, that he means objections which would fit the Platonic arguments, the nature of which he considers to be "abstractly dialectical" (cf Ross, *Metaphysics*, II, p 424) Those of his objections which are ἀκριβέστεροι, then, are so called because they answer οἱ ἀκριβέστεροι of the Platonists

On the other hand, οἱ ἀκριβέστεροι τῶν λόγων has been taken to mean Plato's own statements as opposed to those of his followers. Jackson (*Journal of Philology*, X [1881], p 255, n 2) took the phrase so and interpreted the sentence as meaning that Plato's more precise statements (in the *Republic* and *Phaedo*) assert ideas of relations which "orthodox Platonism" denies and that Plato himself in the *Parmenides* advanced against the theory of the earlier dialogues the objection of the "third man" This interpretation was part of Jackson's theory that after the *Parmenides* Plato abandoned ideas of relations, to which "change," he argued, this sentence refers (see on Jackson's theory the references in note 152 *supra*) Neither Plato nor Aristotle offers any evidence for such a "change"; furthermore, it would be queer for Aristotle to call both the arguments that established the "earlier" theory and those which destroyed it οἱ ἀκριβέστεροι τῶν λόγων. Without in any way subscribing to Jackson's general theory, Ross (*Metaphysics*, I, p 194) follows him in taking οἱ ἀκριβέστεροι τῶν λόγων to be "*implications actually stated* in Plato's more accurate arguments, though unwelcome to his successors", these "more accurate arguments" he identifies as *Phaedo* 74 A-77 A, *Republic* 479 A-480 A (ideas of relative terms), and *Parmenides* 132 A, B, D (the "third man") His chief reason for adopting this interpretation seems to be his belief that λέγουσιν must mean "mention" and cannot mean "involve" as Alexander interprets it (*Metaph*, pp. 83, 34; 85, 7-8, cf Syrianus, *Metaph*, p 111, 27, Asclepius, *Metaph*, p 75, 19-21, so Ross also in the *Oxford Translation*[1] [*Oxford Trans*[2] "introduce"]) With this interpretation he can treat the sentence as a direct reference to the *Parmenides* and so avoid the embarrassment felt by some scholars at Aristotle's apparent failure to notice that Plato had anticipated the objection of the "third man" To Ross' interpretation, as to Jackson's, it must be objected that it would

The argument reported by Alexander here is essentially the same as the ἓν ἐπὶ πολλῶν (see page 228 *supra*), for it too proceeds from the common predicate of a multiplicity of individuals and argues that this predicate cannot be identical with any of the individuals since the latter are constantly changing and indeterminate (cf Alexander, *Metaph.*, p. 83, 6-11 and p. 80, 10-14).[185] Instead of concluding immediately, however, that the common predicate is "separate from the perceptible individuals" and so an idea, it disposes first of the possibility

require οἱ ἀκριβέστεροι τῶν λόγων to mean with regard to the first half of the sentence "arguments *for* the ideas" and with regard to the second half "arguments *against* the ideas" Moreover, τῶν λόγων, as we have seen, should mean the λόγοι before mentioned, the arguments listed and criticized in the περὶ ἰδεῶν Now, in that work the 'third man" was given as a difficulty involved in the ἓν ἐπὶ πολλῶν, most probably without reference to Plato's use of it, for, had Aristotle there intimated that the ἀκριβέστεροι λόγοι were those which Plato himself had used, Alexander would not have had to invent this forced explanation of the term If λέγουσι could mean only "state" or "mention," the context of the sentence would be inexplicable, but it is surely incorrect so to restrict its meaning After all, λέγειν commonly means "to indicate," "to mean", and when Aristotle says of Anaxagoras (*Metaphysics* 989 B 16) ἐκ δὴ τούτων συμβαίνει λέγειν αὐτῷ τὰς ἀρχὰς τό τε ἓν . . καὶ τὸ θάτερον, he does not mean that Anaxagoras *says* or *states* or *mentions* these principles but that his words *imply* them (Ross himself translates "from this it follows that he must say . . ", cf also the τρόπον τινὰ καὶ λέγειν καὶ πρῶτον λέγειν . . Ἐμπεδοκλέα which, Aristotle confesses, represents not Empedocles' words but only their "necessary implication" [985 A 4-10]) To say that certain Platonic arguments λέγουσι τὸν τρίτον ἄνθρωπον is only a more vivid way of expressing what is said at 1039 A 1-3 if the common predicate indicates an individual entity, συμβαίνει ὁ τρίτος ἄνθρωπος. The use of λέγειν as "imply," "say *in effect*," can be illustrated by another pertinent passage of Alexander Just after having given the Platonic argument which expressly asserts the existence of the idea αὐτόζῳον (*Metaph*, p 83, 14-17) he says τῶν δὲ πρός τι οὐκ ἔλεγον ἰδέας εἶναι διὰ τὸ τὰς μὲν ἰδέας καθ' αὑτὰς ὑφεστάναι αὐτοῖς οὐσίας τινὰς οὔσας, τὰ δὲ πρός τι ἐν τῇ πρὸς ἄλληλα σχέσει τὸ εἶναι ἔχειν (*ibid*, p 83, 24-26). Obviously this cannot mean "they *said* there are not ideas of relatives . ." but rather "their statements *imply* that there are not ideas of relatives, since the ideas exist for them as definite substances in themselves but relatives have their being in relation to one another."

[185] The likeness of this argument to the ἓν ἐπὶ πολλῶν is further emphasized by one of the objections to it which is also advanced against the latter, namely that it must lead to ideas of negations such as "the unequal" (Alexander, *Metaph*, p. 83, 28-30; cf the LF version, p. 82, last 3 lines).

(already really excluded by the argument that *none* of the particulars is identical with the predicate) that one of the particulars may be the model of which the others are likenesses and then draws as conclusion the only remaining possibility, that *all* the phenomenal particulars are likenesses of a model in reference to which the predicate is applied to them (see page 230 *supra*) Such an argument might well have been classed among the ἀκριβέστεροι not because it tries any more than the others to prove that the idea is a παράδειγμα but because it draws its conclusion from an exhaustive consideration of the possible ways in which the same name may be given to several different things [186]

It has sometimes been supposed that Aristotle's objection to the Platonic arguments which establish ideas of " relations " is of the same kind as the objections in the preceding sentence, namely that the Platonic arguments imply the existence of ideas which the Platonists themselves expressly deny.[187] Yet the argu-

[186] Although the argument in this form is not found in the Platonic dialogues it has similarities to *Phaedo* 74 A-75 C which suggest that that passage was not without influence upon its construction In the *Phaedo*, too, it is argued that phenomenal equals cannot be identical with αὐτὸ τὸ ἴσον, that they are called " equal " because we recognize that they seek to approximate equality but fall short of it, and that this implies the existence of an absolute equality to which we refer the sensibles The passage, furthermore, is introduced by an account of the reminiscence of an original by means of a " likeness " (See the version of the argument in Plutarch, *frag* VII, 26 [vol VII, p 33, 11-20, Bernardakis] = Olympiodorus, *In Phaedonem*, p 159, 4-11 [Norvin]) Now Plato says that this demonstration applies not only to " equality " but to all things οὗ ἐπισφραγιζόμεθα τὸ " αὐτὸ ὃ ἔστι " (75 C-D), and there is no reason to suppose that the argument reported by Alexander was not also meant to establish the existence of ideas in the case of *all* common predicates

Interesting is the fact that Bertrand Russell, apparently without knowledge of the ἀκριβέστεροι λόγοι, has contended that the nature of relations constitutes the strictest proof that there are such entities as universals (*The Problems of Philosophy*, chap. IX).

[187] Zeller, *Plat Studien*, p 261, *idem*, *Phil Griech*, II, 1, p 703, n 3, Susemihl, *Die Genetische Entwickelung der Plat Phil*, II, p 540, Jackson, *Journal of Philology*, X (1881), pp 256-7, Natorp, *Platos Ideenlehre*[2], p 426, Robin, *Idées et Nombres*, pp 129-130 (cf note 157), 188 Zeller at first rejected this supposed testimony of Aristotle as " eine mangelhafte Auffassung der platonischen Ansicht," but later considered it to refer to a change in Plato's theory not recorded in the dialogues (so also Susemihl). Robin rejects the

ments of the Platonists do not merely *imply*, they expressly *assert* the existence of ideas of relative terms, and this difference is clearly stated by Aristotle (*τῶν πρός τι ποιοῦσιν ἰδέας* [990 B 16] but *κατά τε γὰρ τοὺς λόγους . εἴδη ἔσται* [990 B 12]), who, moreover, a little later in the *Metaphysics* takes as a typical Platonic idea *αὐτοδιπλάσιον* (990 B 31-34). The separation of this objection from the preceding sentence and its connection with the "third man" show that the type of difficulty being raised here is different from *οὐχ ὧν οἰόμεθα τούτων εἴδη γίγνεται* Aristotle is contending that even the assumption of ideas the existence of which is expressly stated by the Platonists and which seems to follow from their arguments conflicts with certain other doctrines of the Platonists themselves.

They say that there are ideas of *τὰ πρός τι* and yet they contend that *τῶν πρός τι γένος* does not exist *καθ' αὑτό* What it is in this second statement which Aristotle argues is inconsistent with ideas of *τὰ πρός τι* Alexander explains by saying that for the Platonists the ideas exist as definite substances *καθ' αὑτάς* but relative terms have their being in *ἡ πρός ἄλληλα σχέσις* (*Metaph.*, p. 83, 24-26, see note 184 *supra*). That is, since the Platonists

supposed statement as incorrect, arguing that "les conséquences déduites par Aristote paraissent avoir excédé de beaucoup les données sur lesquelles il les fondaient" (*op cit*, pp 189 190) Ross seems to contradict himself, for, although in his comment on 990 B 16 (*Metaphysics*, I, p 194) he says "He (*scil* Aristotle) does not say that Platonic arguments lead to a belief in Ideas of relations, and that yet the Platonists deny the existence of such Ideas" and although he denies that Aristotle's statement points to a change in the Platonic theory, yet on 990 B 11 (*op cit*, I, p 191) he lists relative terms among "the things of which according to Aristotle the Platonists did not think there were ideas" Apparently, however, Ross' final opinion is given in his note on 990 B 16 where he translates *ὧν . . γένος* by "which, we maintain, do not form an independent class", this means, he says, that while Platonic arguments lead to a belief in an idea, e g, of the equal we do not suppose that all equal things form a separate class *in rerum natura*, for such a classification would cut across any natural classification of the contents of the universe Now such an objection would be an intelligible one for Aristotle to make, but there was no reason for him to restrict it to ideas of *τὰ πρός τι*, for it applies to qualities equally well Obviously the argument turns on the Platonic distinction of *καθ' αὑτό* and *πρός τι* which was exhaustive Alexander's explanation, which, moreover, very probably comes from the *περὶ ἰδεῶν*, adequately explains this connection and therefore seems to me to indicate the correct interpretation of the passage

say that relative terms exist πρὸς ἄλληλα, such a term cannot be καθ' αὑτό , the idea does, however, exist καθ' αὑτήν, therefore, in positing ideas of relative terms they contradict their own distinction between the classes of τὰ καθ' αὑτὰ and τὰ πρός τι. Aristotle's objection, then, is simply the "abstractly logical" contention (cf *Eth. Eud.* 1217 B 16-19) that what is πρός τι is by that very fact *not* καθ' αὑτό and so cannot have the essential characteristic of an idea (cf. *Metaphysics* 1031 A 28-31, 1033 B 26-29) The logical distinction from which this objection is developed is certainly Platonic; Plato refers as if to a commonplace to the difference between terms which are καθ' αὑτά and those which are πρός τι or πρὸς ἄλλα or πρὸς ἄλληλα [184] It is just as certain, however, that he did not believe that this distinction involved the elimination of relative terms from the sphere of ideas. On the contrary, the very observation that what is different is so called always in relation to something else serves him rather as a proof that the "nature of the different" is an independent idea (*Sophist* 255 D), and that too even though

[184] Ἀλλ' οἶμαί σε συγχωρεῖν τῶν ὄντων τὰ μὲν αὐτὰ καθ' αὑτά, τὰ δὲ πρὸς ἄλλα del λέγεσθαι To the latter class belongs τὸ ἕτερον which del πρὸς ἕτερον λέγεται, for "whatever is 'other' is what it is in reference to another" (*Sophist* 255 C D, cf *Parmenides* 160 D-E, 164 C) Greater and less, more and fewer, double and half, heavier and lighter, swifter and slower, hot and cold, knowledge and its object are given as examples of ὅσα ἐστὶν οἷα εἶναί του or πρός τι (*Republic* 438 B-D), of such terms the meaning is not πρὸς ἑαυτό but πρὸς ἄλλο (*Charmides* 168 B-169 A) Such terms as master, slave, father, child, brother, sister are what they are in virtue of a reciprocal relationship (πρὸς ἄλληλα, *Symposium* 199 D E, *Parmenides* 133 C-D) In the *Theaetetus* (160 B) αὐτὸ ἐφ' αὑτοῦ is contrasted with τινὶ εἶναι ἢ τινὸς ἢ πρός τι.

There is a further distinction between what is perceived αὐτὸ καθ' αὑτό and what is always accompanied in perception by the ἐναντίον (*Republic* 524 D-E, cf *Timaeus* 62 B hard and soft are πρὸς ἄλληλα οὕτως [cf *Republic* 524 A, *Theaetetus* 186 B]), the *Theaetetus* (186 B) refers to this ἐναντιότης πρὸς ἀλλήλω which is judged by the soul itself (cf *Republic* 524 B-C) Shorey suggested (*Unity*, note 222) that this passage of the *Theaetetus* was the source of Hermodorus' distinction of τὰ πρὸς ἕτερα, which he contrasted with τὰ καθ' αὑτά, into τὰ πρὸς ἐναντία and τα πρός τι (see note 192 *infra*). According to Simplicius (*Categ*, p 63, 21-24 = Xenocrates, *frag* 12) Xenocrates maintained against Aristotle the restriction of the categories to two, τὸ καθ' αὑτό and τὸ πρός τι, which indicates that he considered further refinements to be unessential and not genuinely Platonic, whatever variations of expression Plato may have used for τὸ πρός τι.

it is κατακεκερματισμένη ἐπὶ πάντα τὰ ὄντα πρὸς ἄλληλα (258 D-E). Yet Plato did characterize the ideas as αὐτὰ καθ' αὑτά (e.g. *Timaeus* 51 B-D, *Parmenides* 135 A-B), and the crux of the question is *how* he could suppose that this did not involve him in the inconsistency which Aristotle discovers. The answer is indicated by the *Parmenides* (133 C-134 E) where Parmenides tries to show that there could be no connection between the world of ideas and the phenomenal world. He begins by getting Socrates' ready admission that on his theory αὐτήν τινα καθ' αὑτὴν ἑκάστου οὐσίαν cannot exist in the phenomenal world, its character as αὐτὴ καθ' αὑτήν prohibits that. He then argues that ideal relatives have their being in relation to ideal correlatives, phenomenal relatives being in relation to phenomenal correlatives (ὅσαι τῶν ἰδεῶν πρὸς ἀλλήλας εἰσὶν αἵ εἰσιν αὐταὶ πρὸς αὐτὰς τὴν οὐσίαν ἔχουσιν . . τὰ δὲ παρ' ἡμῖν ταῦτα ὁμώνυμα ὄντα ἐκείνοις αὐτὰ αὖ πρὸς αὐτά ἐστιν ἀλλ' οὐ πρὸς τὰ εἴδη).[189] Here the phrase αὐτὴ καθ' αὑτὴν οὐσία does not exclude relative terms; on the contrary, ideal relatives are expressly included among the αὐταὶ καθ' αὑτὰς οὐσίαι, and phenomenal relatives are excluded not because they are relatives but because they are phenomenal.[190] In short, the two

[189] It has already been remarked that Aristotle recommends as a means of overthrowing definitions proposed by Platonists this very argument (*Topics* 146 B 36-147 A 11, see page 8 *supra*, and cf τὸ δ' εἶδος πρὸς τὸ εἶδος δοκεῖ λέγεσθαι [147 A 7] with *Parmenides* 133 E 6 αὐτὰ αὐτῶν καὶ πρὸς αὐτὰ ἐκεῖνά τέ ἐστι καὶ τὰ παρ' ἡμῖν ὡσαύτως πρὸς αὑτά). The conclusion of Parmenides that we can have no knowledge of the ideas and God, as partaking of αὐτὴ ἐπιστήμη, can have no knowledge of this world is reached by applying the rule formulated in *Republic* 438 A 439 A that the correlatives of qualified relatives are qualified, of unqualified relatives unqualified (cf the example at 438 C-D ἐπιστήμη μὲν αὐτὴ μαθήματος αὐτοῦ ἐπιστήμη ἐστὶν ἢ ὅτου δεῖ θεῖναι τὴν ἐπιστήμην, ἐπιστήμη δέ τις καὶ ποιά τις ποιοῦ τινος καὶ τινός [note the discussion of the correlative of ἐπιστήμη in *Charmides* 167 B 169 B]). From this it is clear at least that the difficulties presented by the nature of correlatives were not "new" to Plato when he composed the *Parmenides* and that the fact that such terms are πρὸς ἄλληλα appeared to him at any rate to be no reason for refraining from positing ideas of them.

[190] It cannot be contended either that this is the point of Parmenides' criticism which is to be met by the abolition of ideas of relatives. For one thing, Plato obviously did *not* abolish such ideas, for another, their abolition would not answer the objection of Parmenides he could still contend that "human knowledge" is related to phenomena and the ideas would remain unknown and unknowable.

logical classes cut across both "worlds," and καθ' αὐτό as a "category" opposed to πρός τι does not mean the same thing as καθ' αὐτό applied to the mode of existence of the ideas. In the latter case the phrase means absolute self-subsistence; and even the ideas which πρὸς ἀλλήλας εἰσὶν αἵ εἰσιν are αὐταὶ καθ' αὑτὰς οὐσίαι, just as is the "nature of difference" in the *Sophist*. In the former sense καθ' αὐτό has no more reference to "absolute being" than its contrary πρός τι has to "dependent being" (cf. Cornford, *Plato's Theory of Knowledge*, p 282, n 1). The dialectical objection of Aristotle depends upon the substitution of the ontological for the logical sense of καθ' αὐτό and so maintains that the logical distinction of the Platonists ought to exclude relative terms from the world of self-subsistent entities.[101]

[101] This confusion, which served Aristotle as a dialectical objection, caused Jackson to believe that the *Parmenides* introduces a restriction of "ideas in the technical sense" to a class of αὐτὰ καθ' αὑτὰ εἴδη from which "relations" are expressly excluded That is, he supposed that because the relative terms of *Sophist* 255 C are distinguished from the non relative as πρὸς ἄλλα from καθ' αὑτά the former cannot be αὐταὶ καθ' αὑτὰς οὐσίαι (cf Shorey, *A J P*, IX [1888], pp 287-8, Zeller, *Kleine Schriften*, I, pp 374-5).

To καθ' αὐτό in the ontological sense corresponds the use of πρός τι which expresses the mode of existence manifested by that of a copy dependent on its model So in *Timaeus* 29 A-B the cosmos is said πρὸς τὸ λόγῳ καὶ φρονήσει περιληπτὸν καὶ κατὰ ταὐτὰ ἔχον δεδημιούργηται and so to be an εἰκών τινος, and while the ideas are καθ' αὑτά (51 B-E) the "likenesses" of them as likenesses must always be ἑτέρου τινός (52 C). In this sense all phenomena are πρός τι (cf the frequent reference to phenomena as τὰ πρὸς τὰ εἴδη [Alexander, *Metaph*, pp 56, 1-2, 58, 12-13, 97, 10-12, 123, 10-11]) Albinus ([Alcinous], *Didaskalikos*, chap IX, p 163, Hermann) mentions as an argument for the existence of ideas the contention that the cosmos must come to be πρός τι (cf. Alexander, *Metaph*, pp 88, 20-89, 2, see note 144 *supra*) Alexander gives a refutation of the theory based upon the characterization of the ideas as models of phenomena —If the essence of the idea is to be a model and a model is πρός τι (for it is a model "of something"), then 1) the Platonists make their first principle a relative term, 2) all things are relative terms for all are either likenesses or models and both of these are πρός τι (cf the sceptic argument dealing with genera and species in similar fashion [Sextus, *Pyrrh Hypotyp.*, I, 138]), and 3) if a model is for the sake of what comes to be πρὸς αὐτό, the ideas as models will be lower in the scale of worth than their likenesses (*Metaph.*, p 86, 13-23) This kind of argument depends upon the substitution of πρός τι in the sense of "relative" for πρός τι in the sense of "dependent upon" (cf. Shorey's suggestion that οὐδ' αὐτὸ τοῦτο ἐφ' ᾧ γέγονεν [*scil.* εἰκὼν]

On the other hand, the second objection given by Alexander (*Metaph.*, p. 83, 26-28) assumes the position stated in the *Parmenides*, that phenomenal relatives correlate with phenomena, ideal relatives with ideas. Instead of drawing the conclusion of Parmenides, however, it contends that as the correlative of the equal is an equal, there must be a second idea of equal to which the idea of equal is equal, for if it were equal to nothing it would not be equal. This notion that the idea of equal "is equal" would serve as the basis for the objection of the "third man," since the idea and the phenomenal equals would then have a "common predicate"; but the objection as stated by Alexander has nothing to do with the "third man" argument, for the second idea of equal is not posited as that in which the first idea and the phenomenal equals participate, i. e. as the "common predicate" of these, but simply as the ideal correlative required by the relative idea (*contra* Robin, *Idées et Nombres*, p. 189). This is a special kind of "duplication of ideas," one, moreover, which would not affect all ideal relatives, for such ideas as mastery, fatherhood, difference would not have to be "duplicated" in order to have ideas correlative with them. Do the ideas of equal and similar, however, imply such a duplication? The idea of equal

ἑαυτῆς ἐστιν [*Timaeus* 52 C 2-3] is meant to deny a "reciprocal relationship" between idea and likeness [*A. J. P.*, X, 1889, pp. 67-8], adopted apparently by Rivaud in his Budé translation, on the last of the three arguments see *Philebus* 53 D-54 C). Parmenides' argument has a similar basis. Because phenomenal correlatives are πρὸς ἄλληλα and ideal correlatives are πρὸς ἀλλήλας he contends that there can be no connection between phenomena and ideas, that is, he suppresses the other sense of πρός, for phenomena are *correlative with* phenomena (πρὸς ἄλληλα) but are at the same time *dependent upon* the ideas (πρὸς τὰ εἴδη). It is important to observe that Parmenides deals *only* with relative terms and avoids non-relatives, whether ideal or phenomenal (a point not well brought out by the commentators), the reason is that his argument turns upon the ambiguity of πρός τι which would be immediately revealed by the consideration of non-relative terms which are πρός τι in the sense of πρὸς τὰ εἴδη but *not* πρὸς ἄλληλα (cf. Proclus, *In Parmenidem*, V, p. 194, Cousin). So far as Plato's attitude toward the conclusion of Parmenides is concerned, it was remarked long ago (cf. Shorey, *A. J. P.*, IX [1888], p. 288, n. 2) that in *Philebus* 61 D-62 B Plato quietly assumes that the knowledge of τὰ γιγνόμενα καὶ ἀπολλύμενα and the knowledge of τὰ κατὰ ταὐτὰ καὶ ὡσαύτως ὄντα del, i. e. of the objects of the phenomenal world and of the ideas (cf. 59 A-C), can exist in the human mind.

is Equality; and one may doubt that Equality itself is equal *to* anything (cf Proclus, *In Parmenidem*, V, p 199, Cousin: *ἐνταῦθα μὲν γὰρ τὸ ὅμοιον τῷ ὁμοίῳ ὅμοιον, καὶ τὸ ἴσον τῷ ἴσῳ ἴσον, καὶ δύο πράγματα ἐστὶ τοὐλάχιστον τὰ ὅμοια καὶ τὰ ἴσα ἀλλήλοις ἐκεῖ δὲ μία ἡ ὁμοιότης καὶ μία ἡ ἰσότης καὶ αὐτὴ ἑαυτῆς οἷσα καὶ οὐκ ἄλλου τινός*). Aristotle himself appears to recognize this when he classifies Equality and Similarity among those things that are called relative because the subjects which have them as properties, the equal and the similar, are relatives (*Metaphysics* 1021 B 6-8). If this were translated into the terminology of Plato's theory, it would mean that the idea, Equality, itself has no correlative, though that which by participation in the idea "is equal" is correlative with another such equal, but a direct answer of this kind is not given in the writings of Plato, although a hint may be gleaned from the fact that he treats "the same" as a relative term and posits a single idea, Sameness, which, however, has no correlative but itself (*Sophist* 254 D-255 C, cf. 256 A-B and see *Metaphysics* 1018 A 7-9, 1021 A 8-14)

It is not, then, Aristotle's intention to assert that the Platonists do not posit ideas of relatives but rather that in so doing they violate their own logical principles[192] Thus he seeks to elimi-

[192] The question whether *some* Platonists may, nevertheless, have rejected ideas of relative terms is raised by the observation that Albinus (*Didaskalikos*, chap IX, see note 151 *supra*), accepting a definition of idea which is ultimately derived from that of Xenocrates, says that most of the Platonists refuse to admit ideas *τῶν πρός τι, οἷον μείζονος καὶ ὑπερέχοντος* (*sic*[1] *ὑπερεχομένου*?) Since Albinus seems to have followed the eclectic tendency of identifying the first Aristotelian category with the Academic *καθ' αὑτό* and making the others subordinate divisions of the Academic *πρός τι* (cf Witt, *Albinus and the History of Middle Platonism*, pp 66-7), the denial of such ideas may well have been due to Aristotelian criticism, Albinus, at any rate, finds the ten categories in Plato's writings (chap. VI), makes the distinction between *οὐσία* and *τὰ συμβεβηκότα* fundamental for dialectic (chap V), and calls the idea *ὡς πρὸς αὑτὴν ἐξεταζομένη οὐσία* (chap IX, but notice that *πρὸς ἡμᾶς* it is *νοητόν, πρὸς τὴν ὕλην μέτρον, πρὸς τὸν αἰσθητὸν κόσμον παράδειγμα*, in all of which characters it is open to the dialectical objection of being itself a "relative," so that the phrase, *ὡς δὲ πρὸς αὑτὴν οὐσία* may have been added for the purpose of forestalling this criticism) It is noteworthy that Proclus who interpreted the definition of Xenocrates as eliminating ideas of artefacts (see pages 256 257 *supra*) apparently saw in this definition no reason for denying such ideas as Similarity and Equality, these he posited along with the Neo-Platonists generally (Proclus, *In Parmenidem*, V, pp 55, 199 [Cousin],

nate the possibility of those ideas which would fall into one of the two Platonic logical classes, with the second half of the sentence he attacks the ideas in the remaining class, those unaffected by the objection to ideas of relatives, and the existence

Plotinus, *Enn* V, 9, 10, Syrianus, *Metaph*, pp 107, 34-108, 5, 114, 4-9), who, though they rejected ideas of some relatives, did not reject even these *qua* relatives

What foundation in the doctrine of the old Academy the view mentioned by Albinus may have had might be expected to be indicated by the fragment of Hermodorus which scholars have sometimes connected with *Metaphysics* 990 B 15-17 (*cf* Heinze, *Xenokrates*, pp 55 6 [who contends that Plato rejected ideas of τὰ πρός τι, see note 184 *supra*], Merlan, *Philologus*, LXXXIX [1934], p 43, n 8) We have already remarked that in one particular this fragment is in contradiction with Plato's explicit statements (see note 96 *supra*); but it remains to examine its logical distinctions in the light of the present question Hermodorus divides τὰ πρὸς ἕτερα (which have been distinguished from τὰ καθ' αὑτά) into πρὸς ἐναντία and πρός τι. Can he mean to imply that for the terms in this last class there are no ideas? If the passage of Sextus be taken as a pertinent commentary on this division, as all who interpret the fragment do take it, the pair διπλάσιον—ἥμισυ falls into the class of πρός τι (*Adv Math* X, 265), but we have seen that Aristotle himself takes αὐτοδιπλάσιον as a typical Platonic idea, so that ideas of this class cannot have been denied any more than those of τὰ πρὸς ἐναντία among which Hermodorus himself mentions ἀγαθόν Thus far, then, the scheme of logical classes has no bearing on the extent of the world of ideas, but Hermodorus has another distinction, καὶ τούτων τὰ μὲν ὡς ὡρισμένα τὰ δὲ ὡς ἀόριστα Does this division apply to both sub classes of τὰ πρὸς ἕτερα or only to τὰ πρός τι? Merlan (*op cit*, p. 43) has adopted the latter interpretation, which Heinze (*Xenokrates*, pp 39-40) had rejected in favor of the former Inasmuch as κινούμενον which is the ἐναντίον of τὸ μένον admits τὸ μᾶλλον καὶ τὸ ἧττον and so is ἀόριστον, while διπλάσιον in the class of τὰ πρός τι is certainly ὡρισμένον, there are obviously "determinate" and "indeterminate" terms in both sub-classes of τὰ πρὸς ἕτερα Nor is it possible that ideas were denied for such terms, in both sub-classes, as are ἀόριστα, for among the πρὸς ἐναντία must be reckoned κινούμενον and among the πρός τι Hermodorus certainly included μακρόν (cf. Simplicius, *Phys.*, p 248, 7-8 πλατύτερον καὶ στενότερον . . . καὶ πάντα τὰ οὕτως λεγόμενα [Sextus, *Adv Math*, X, 268 τοῦ γὰρ μείζονος καὶ τοῦ μικροτέρου τῶν πρός τί πως καθεστώτων] and Plato, *Politicus* 284 E. μῆκη καὶ βάθη καὶ πλάτη) but Aristotle ascribes to the Platonists ideas of κίνησις (*Metaphysics* 1050 B 34-1051 A 2) and μῆκος (*Topics* 143 B 24-32). This classification, then, can have no bearing on the theory of ideas in the sense that any one of its classes has no ideas for the terms included in it, certainly Aristotle testifies to ideas for terms which would fall into all the divisions mentioned, and in this he is in accord with Plato himself who in the *Sophist*, for example, besides ideas of sameness and difference assumes ideas of rest, motion, τὸ μέγα, τὸ σμικρόν, and τὸ ἴσον (254 D-258 C).

The classification of Hermodorus seems to be an attempt at a formalized com-

of these ideas too, he contends, is impugned by the very argument through which the Platonists try to demonstrate it. In the *Metaphysics* this refutation is indicated by the curt remark that the Platonic arguments imply the "third man." Alexander

bination of the ἐναντία of *Theaetetus* 186 A-B, the relative opposition (ὑπερβολὴ καὶ ἔλλειψις) of μῆκη καὶ βάθη καὶ πλάτη καὶ ταχυτῆτες of *Politicus* 283 C-286 C with their absolute "means," and the μᾶλλον καὶ ἧττον of *Philebus* 24 A-C This would explain why ἀγαθόν—κακόν appears in the class of πρὸς ἐναντία (it occurs in the *Theaetetus* passage), although the pairs in this class have no intermediate (Sextus, *Adv Math* X, 268) whereas according to the general Academic doctrine there is an intermediate between good and evil (Plato, *Gorgias* 467 E, *Symposium* 202 B, *Republic* 491 D, Xenocrates, *frag* 76, cf. Διαιρέσεις Ἀριστοτέλους, § 68) When Hermodorus says that τὰ ὡς μέγα πρὸς μικρὸν λεγόμενα πάντα have τὸ μᾶλλον καὶ τὸ ἧττον, he again seems to contradict Plato, for the διπλάσιον--ἥμισυ seems to be ὡς μέγα πρὸς μικρὸν λεγόμενον and yet Plato expressly distinguishes it from the class that admits τὸ μᾶλλον καὶ ἧττον (*Philebus* 25 A-B) As is shown, however, by the comparative expressions (πλατύτερον καὶ στενότερον, μᾶλλον ἄνισον ἀνίσου, etc [Simplicius, *Phys*, p 248, 6-11], cf Sextus, *Adv Math* X, 271-273), μέγα πρὸς μικρόν is used in the same way as μέγα καὶ μικρόν and means "*indeterminate* relation" (*Philebus* 25 C. μεῖζον καὶ σμικρότερον and note the comparatives in 24 A-25 C); the "indeterminateness" consists in the *instability* of the relationship (προχωρεῖ καὶ οὐ μένει [*Philebus* 24 D], πρὸς ἄλληλα τἀναντία διαφόρως ἔχοντα [*ibid* 25 D-E]) Now indeterminateness is a characteristic of phenomena which distinguishes them from ideas (cf Alexander, *Metaph*, pp 79, 10 and 83, 8-10), it is the negation of the essential characteristic of ideas, and so of indeterminates, *qua* indeterminate, there can be no idea (see note 172 and page 266 with note 175 *supra*) It is, therefore, by no means inconsistent to posit an idea of κίνησις or of μῆκος, as Plato and the Platonists did, and at the same time to deny the existence of an idea of μᾶλλον καὶ ἧττον κινούμενον, of μεῖζον καὶ σμικρότερον, for there is no idea of indefinite variability in quantity or quality, which is rather the result of the phenomenal manifestation of the ideas (see pages 437 442 *infra*) Of those phenomenal characteristics which "admit τὸ μᾶλλον καὶ ἧττον" there are ideas but there is no idea of τὸ μᾶλλον καὶ ἧττον as such So even in the *Phaedo* sensibles are 'greater and smaller in comparison with one another" by participating not in any idea of "greater and smaller" but in the ideas of μέγεθος and σμικρότης (100 E-102 E), the phenomenal μεῖζον is that which participates in μέγεθος in relation to the phenomenal manifestation of σμικρότης (cf. Campbell on *Politicus* 283 D and Plotinus, *Enn.* VI, 1, 8). Of *definite* relationships, too, there are ideas, for these cancel indeterminateness of every kind (*Philebus* 25 A-B, D-E) So in the sense that there are no ideas of indeterminate variations, of ὑπερβολὴ καὶ ἔλλειψις as such, and *only* in this sense is there any foundation in the Platonism known to Aristotle for the view mentioned by Albinus that there are no ideas τῶν πρός τι, οἷον μείζονος καὶ ὑπερεχομένου.

refers this to the argument in the περὶ ἰδεῶν according to which the Platonic demonstration of the existence of ideas from the nature of the common predicate of a multiplicity of subjects involves an infinite multiplication of every idea assumed as unique by the Platonists (see pages 233-234 *supra*). That is, Aristotle contends that the argument of the ἓν ἐπὶ πολλῶν as used by the Platonists is really a refutation of the existence of "separate" ideas since it is itself proof that the idea, if separate, cannot be unique

In *Metaphysics* Z, chap 13, where with the theory of ideas in view Aristotle argues that no universal can be a substance, there is another reference to this difficulty He supports his contention with the remark that a common predicate signifies not an individual thing (τόδε τι) but a certain qualification (τοιόνδε) and says that unless this is so the "third man" follows (*Metaphysics* 1038 B 34-1039 A 3) This brief remark is amplified in *Sophistici Elenchi* 178 B 36-179 A 10 where the thesis that there is a third man apart from the individual men and "man" (ὅτι ἔστι τις τρίτος ὕνθρωπος παρ' αὐτὸν καὶ τοὺς καθ' ἕκαστον) is treated as a verbal sophism which is invalidated by the observation that "man" is a common predicate and common predicates signify not an individual thing but a certain qualification or way of being related or some such characterization The case is said to be similar to that of the question whether "Coriscus" and "educated Coriscus" are the same or different one element of the complex, namely "Coriscus," signifies an individual substance, the other, "educated," a certain qualification which cannot then be "isolated" (cf *Metaphysics* 1015 B 23-26, 1018 A 2-4). Since, however, Aristotle himself "isolates," i. e. abstracts in thought, the common predicate, he here goes on to add that it is not isolation as such which produces the "third man" but the admission that the isolated factor is an individual thing, for without this it would not follow that what is both Callias and "man" is an individual thing [103] Nor will it make

[103] οὐ γὰρ ἔσται τόδε τι εἶναι ὅπερ Καλλίας καὶ ὅπερ ἄνθρωπός ἐστιν means that without the individualization of the common predicate it would not follow that the predicate common to Callias and to "man" is an individual The paraphrase of E Poste (*Aristotle on Fallacies*, 1866, p 71) is correct Baeumker's rendering (*Rhein. Museum*, XXXIV [1879], p 79), "eine solche (i. e.

any difference if the isolated term be called not "substance" but "quality": the "third man" will follow so long as the isolated factor is individualized, for that which is apart from the many particulars will be "one thing"

That the "third man" of the *Sophistici Elenchi* and the "third man" of *Metaphysics* 1039 A 2-3 are the same is vouched for by the fact that in both places the argument is said to follow from taking the common predicate as an individual thing. That it is then the same as that mentioned in *Metaphysics* 990 B 17 is also certain, for this passage surely refers to the περὶ ἰδεῶν where the "third man" was developed from the ἓν ἐπὶ πολλῶν. Furthermore, although Aristotle when he refers to the argument by name seems to take it for granted that his audience needs no further explanation, in the *Sophistici Elenchi* he clearly indicates that the reason why the argument is valid against those who individualize the common predicate is that they cannot deny individual existence to that which is common to this individualized predicate and the multiple particulars; and in *Metaphysics* 991 A 1-3, though the name "third man" is not used, the same reasoning occurs: to make the ἓν ἐπὶ πολλῶν a separate idea must lead to the existence of something common to the idea and the things that participate in it. In all these passages, then, the "third man" is the argument

individualisierte Substanz) sei aber weder der Begriff des Kallias noch der des Menschen überhaupt," is wrong both as a translation of the Greek and from the point of view of Aristotle's doctrine. Pickard-Cambridge (*Oxford Translation*) renders: "For 'Man' cannot be an individual substance as Callias is." This does not give ἔσται its proper force nor does it give the reason why the individualization and *not* the isolation alone involves the "third man." As the γάρ shows, it is this that the sentence is meant to explain: if you do not admit that "man" is an individual, it will not follow that the common predicate of Callias and man is a "third man", if you do admit the first, the "third man" does follow and, the next sentence says, you cannot avoid it by saying that the isolated factor is an individual "quality" instead of an individual "substance" (the last sentence rightly interpreted by Pickard-Cambridge). A. Spielmann (*Die aristotelischen Stellen vom τρίτος ἄνθρωπος*, p. 3) correctly interprets the following sentence but misses the connection of this one with what precedes. He paraphrases as follows: Aus dem Individuum und aus dem Allgemeinen kann durch Vereinigung, durch Zusammendenken nicht ein (von Kallias verschiedenes) Individuelles werden, und wenn ein solches gesetzt wird, so ist es eine sophistische Redewendung."

which Aristotle brought against the ideas in the περὶ ἰδεῶν and which Alexander reports from that work.[194] Aristotle himself considers it to be a fallacy παρὰ τὸ σχῆμα τῆς λέξεως but valid all

[194] The commentary of the Pseudo Alexander (*Soph Elench*, p 158, 20-26, cf also the anonymous *Paraphrasis*, p 54, 11-16) is therefore wrong in supposing that the "third man" referred to in *Sophistici Elenchi* is that which in Alexander, *Metaph*, p 84, 7-16 is ascribed to "the sophists" (see Appendix IV). That form of the argument does not establish its "third man" by stressing the similarity of the idea and the particulars whereas here Aristotle plainly indicates that the individualization of the common predicate brings with it the individualization of what is common to that predicate and the particular The Pseudo-Alexander, failing to see this, interpreted οὐ γὰρ ἔσται τόδε τι εἶναι ὅπερ Καλλίας καὶ ὅπερ ἄνθρωπός ἐστιν as meaning οὐ γάρ, εἰ ἔστιν ὁ Καλλίας τόδε τι, καὶ ὁ ἄνθρωπος τόδε τι ἔσται (p. 159, 14-15, see note 193 *supra*) and then took 179 A 5-7 as representing Aristotle's own position (p. 159, 15-18, so E. Poste also [*Aristotle on Fallacies*, 1866, p 71] and Baeumker [*Rhein Museum*, XXXIV, 1879, p 79]) Clearly, one need not hesitate to reject the evidence of this commentator (cf also Waitz, *Organon*, II, p 570 on 179 A 3), especially since his reason for choosing this example of the "third man" is patent He has copied it from Alexander's commentary on the *Metaphysics* where he found one form of the argument ascribed to Aristotle, one to Eudemus, one to Polyxenus, and one to "the sophists" Since in the *Sophistici Elenchi* "sophistical" arguments should be the subject of discussion, he naturally thought that the "third man" here mentioned must be that ascribed in his source to "the sophists"; he apparently could not believe that Aristotle would treat as sophistical an argument which he himself was said to have used, although he should have seen that even here Aristotle insists that the argument is valid against the Platonists

There is further support for identifying the "third man" of *Sophistici Elenchi* with that of the περὶ ἰδεῶν, for the form of the argument treated by Eudemus in his περὶ λέξεως is likely to have been the same as that which Aristotle calls a fallacy παρὰ τὸ σχῆμα τῆς λέξεως and the "third man" of Eudemus was the same as that used in the περὶ ἰδεῶν (Alexander, *Metaph*, pp 84, 2-7; 85, 3 5 and 9-11) All the evidence, then, both direct and indirect, is against the opinion that, when in Aristotle's extant works there is reference to the "third man" as a difficulty to which the theory of ideas must lead, it is not the argument of the περὶ ἰδεῶν that is meant but the argument that between the idea of man and particular men there should be an "intermediate man" corresponding to the "intermediate mathematicals" of the Platonists (Taylor, *Proc of the Aristot Soc.*, XVI [1915-16], pp 255-270, *Plato*, pp 355-356, *The Parmenides of Plato*, pp 21-23, cf St Thomas Aquinas, *In Metaphysicam Arist Comment.*, I, xiv, § 216 [p 76, ed. Cathala, 1926]). The interpretation of the "third man" of Polyxenus as a reference to these Platonic "intermediates" we have already seen reason to reject (Appendix IV), in any case, since Aristotle's "third man" is always connected with the Platonic treatment of the common predicate, i. e. with the ἓν ἐπὶ πολλῶν, it cannot be that of Polyxenus which does not consider

the same against the ideas because the demonstration of their existence from the ἓν ἐπὶ πολλῶν is itself just this fallacy, since that argument proves that there exists not ἓν τι παρὰ τὰ πολλά

the "common" character of the predicate at all It is true that according to Aristotle the Platonists should in consistency assume intermediates between all ideas and the particulars which participate in them, and this argument has sometimes been called another form of the "third man" (Robin, *Idées et Nombres*, note 51, V [page 611]). Aristotle himself, however, does not refer to it by this name, nor does Alexander mention it as a form of that argument. Moreover, it is not an argument against the ideas, and its development shows that it has no connection with what Aristotle calls ὁ τρίτος ἄνθρωπος It is used only against the assumption of "intermediate mathematicals" and is never connected with the individualization of the common predicate When in *Metaphysics* 1059 B 8-9 Aristotle says τρίτος δ' ἄνθρωπος οὐκ ἔστιν οὐδ' ἵππος παρ' αὐτὸν καὶ τοὺς καθ' ἕκαστον (Ross notes as significant the absence of the definite article [*Metaphysics*, II, p. 309]), he is not presenting an argument against ideas of man and horse but an objection to a third class of mathematicals, arguing that, even if one *admits* the existence of ideas, there is no reason to assume a third intermediate class for some objects which is not assumed for all (*Metaphysics* 1059 B 3-9) So in 997 B 12-24 (and in its résumé, 1076 B 39 1077 A 9) he argues that, if one is to assume intermediates which are the objects of mathematical science (997 B 2-3), since astronomy is such a science there ought to be a set of "intermediate heavenly bodies" and the objects of optics and harmonics should be "intermediate sight and sound" which, as "intermediate sensibles and senses" would imply the existence of "intermediate living beings" Here it is obvious that the "third class of living beings" is an inconsistency which is not and could not be deduced from the assumption of ideas of man, horse, etc but only from the notion of intermediate objects of mathematics and by direct reference to this class of objects This objection, then, has nothing to do with the ideas as such or with the relation to them of sensible particulars, it is entirely unconnected with what Aristotle calls the "third man" and it is also unconnected with the other forms of "third man" known to us.

Although the "infinite regress" developed from the "third man" in the περὶ ἰδεῶν is not explicitly mentioned in the references to this argument in the *Metaphysics* and *Sophistici Elenchi*, Aristotle's silence concerning this element is not significant, for in these passages he merely mentions the argument by name without developing it at all, in two of the passages the regress is implied in the reference to the common predicate, and familiarity with the nature of the argument on the part of the audience, who presumably knew the περὶ ἰδεῶν, is clearly assumed In Eudemus' exposition of the "third man" the regress is not expressly mentioned either, though it is plainly implied; and Alexander correctly identifies the argument in the περὶ λέξεως with that in the περὶ ἰδεῶν (*Metaph*., p 85, 3-5) If Alexander's report is unabbreviated, Eudemus probably omitted mention of the regress only because its implication in the argument as stated is obvious.

as the Platonists think but only ἕν τι καὶ τὸ αὐτὸ ἐπὶ πολλῶν (page 260 *supra*).

This argument against the theory of ideas Plato himself puts into the mouth of Parmenides (*Parmenides* 132 A-B, 132 D-133 A) That Aristotle then should have used it without reference to Plato's anticipation of the objection has greatly exercised scholars, who consequently have tried to explain this fact out of existence. Their methods of doing so have ranged all the way from the desperate remedy of pronouncing the *Parmenides* spurious (see references in Zeller, *Phil. Griech.*, II, 1, p. 475, n 3) to denying the fact by interpreting *Metaphysics* 990 B 17 as an intentional reference to the *Parmenides* (e g Jackson and Ross) The various expedients between these two extremes fall roughly into two classes: some say that Plato got the argument from Aristotle who had invented it and so was under no obligation to refer to the *Parmenides*; others contend that it was invented by neither Aristotle nor Plato, and most of these have followed Baeumker in ascribing it to Polyxenus, although their interpretations of his argument itself are not always the same The variations within each of these two classes need not be canvassed Suffice it to say that in the first class there has been a tendency to specify the περὶ ἰδεῶν as the original source of the argument and to make the *Parmenides* refer directly to this work (e. g. D G Ritchie, R. Philippson), in the second class the chief "deviation" is Taylor's thesis that Aristotle's argument is the same as that of Polyxenus to be sure but that this has nothing to do with the "regress" in the *Parmenides*.

Reason has already been given for rejecting the view that *Metaphysics* 990 B 17 is meant to be a reference to the *Parmenides* (note 184 *supra*). The expedient of branding the *Parmenides* spurious has long been discredited; but, even if it were correct, it would not solve the present difficulty, for it and all the suggestions that the *Parmenides* refers to an objection put forward by Aristotle founder on the fact that the "third man" argument is clearly referred to in *Republic* 597 C (noted first, to my knowledge, by Baeumker, *Rhein. Museum*, XXXIV [1879], p. 83, n. 1). This argument of the *Parmenides* and the περὶ ἰδεῶν, then, was known to Plato before ever Aristotle had

come to Athens. There remains the answer that neither Plato nor Aristotle originated the argument The inventor could not have been Polyxenus either, for his "third man" was entirely different from that of the *Parmenides* and Aristotle's (see Appendix IV); but in the *Sophistici Elenchi* Aristotle refers to this latter form as to a well known sophistical argument, and this in connection with the glancing reference in the *Republic* indicates that it too had been invented by someone other than Aristotle or Plato and used against the ideas long before Aristotle entered the Academy Of the inventor we can only say that he was no one known to us; but, since he probably was not Plato, Aristotle, even though the argument was not by right of discovery his own, can be acquitted of the "scholarly crime" of failing to give Plato the credit for the argument used against him

Much more important than the question of original authorship, however, is Aristotle's failure to intimate that Plato, though he knew the objection, was not moved by it to abandon the ideas This is the significant characteristic of Aristotle's references to the "third man" as a refutation of the ideas Citation of first appearances and reference to the source of one's arguments are conventions of modern scholarship by which Aristotle cannot justly be bound, but, if Plato had answered the argument or dismissed it as invalid, anyone who used it against him thereafter, even were he its originator, was bound to recognize the Platonic defense and to explain why the objection was not thereby invalidated Whether the objection is or is not fatal to the theory of ideas is another question and, so far as concerns the character of Aristotle's criticism, one of less importance than what Plato thought of it. That he did not believe it to be destructive of his theory cannot be doubted, since in the *Republic* (597 C, cf 596 A) he shows himself to be aware of it even where he reasserts the "customary method" of positing a single idea for each group of individuals to which the same name is applied and in the *Timaeus* (31 A), in a context of similar nature, he again glances at the argument (cf. Shorey, *De Platonis Idearum Doctrina*, p. 30, n 4) These passages, one of which is presumably earlier than the *Parmenides* and the other later than it, in both of which the ideas are posited, prove

of themselves that Plato could not have taken the argument in the *Parmenides* as a valid refutation of his theory.[195] They do more than this, for, though they do not give a direct refutation of the "third man," they indicate *why* Plato thought it irrelevant as an argument against the ideas and they do so by defining the sphere in which it has a legitimate application. In the *Parmenides* the objection is presented as proof that the ideas posited by Socrates cannot be unique (132 B 1-2: καὶ οὐκέτι δὴ ἓν ἕκαστόν σοι τῶν εἰδῶν ἔσται, ἀλλὰ ἄπειρα τὸ πλῆθος), and this Parmenides contends follows from Socrates' own argument for the existence of such ideas, an argument which is the essence of the formalized ἓν ἐπὶ πολλῶν (132 A 1-5, see note 170 *supra*). The principle by which an unique idea is posited to explain the identical attribute observed in a multitude of objects must, Parmenides argues, apply also to the new multiplicity consisting of the idea and the particulars; a second such idea then must be posited, and the process will continue indefinitely (132 A-B).

[195] It will not fit the facts either to suppose that in the *Parmenides* the "third man" is presented as a valid refutation of the earlier theory of ideas which is then replaced by a new version that is proof against this attack. If the *Republic* is earlier than the *Parmenides*, as is now generally believed, and if Plato considered the "third man" fatal to the original theory, he must have abandoned that theory at least as early as the *Republic*, which he obviously did not do, or, if he thought the objection valid but still refused as yet to abandon his theory because of it, he would not have referred to it as he does even while reaffirming the "method" of ideas. The striking similarity of the references in the *Republic* and *Timaeus* shows that his attitude toward the "third man" was the same at the time of composing these two dialogues. This makes equally untenable Stenzel's explanation of the *Parmenides* passage on the "third man," an explanation which amounts to a reversal of that just considered. According to Stenzel (*Studien*, pp. 31 and 19-20) the objection had no validity as against the earlier conception of the ideas, for their isolation from the sensible world made it absurd to treat them and the sensible individuals as comparable, but, as the εἶδος ceased to be merely "Idealgestalt" and came to approximate the "concept," the idea and its μετέχοντα approached each other, the ideas threatened to become merely a "duplication of the sensibles,' and this made the "third man" a possible objection to the theory. On this thesis of an alteration in Plato's conception of the ideas see note 128 *supra*, in its application to the "third man" no account whatsoever is taken of the passages in the *Republic* and the *Timaeus*, although, had the bearing of the objection on the "later" conception of ideas been different from what it was on the earlier one, Plato could not have referred to it in the same way in both of these dialogues.

To call the ideas models (παραδείγματα) of which the particulars are "likenesses" (ὁμοιώματα) affords no escape from this regress for the idea is "like" anything which is "like" it and the idea and particular can be "alike" only by participating in another idea, which in turn will be "like" its "likenesses"; and so on endlessly (132 D-133 A). The uniqueness of the idea is ruined and the infinite regress demonstrated by treating the idea as one individual member in a multiplicity and applying to it the argument of the ἓν ἐπὶ πολλῶν which was used in the first place to establish the existence of the idea as a single entity separate from the multiple particulars. This procedure is emphasized by the treatment of the metaphor of model and semblance. Here the second idea cannot be immediately introduced; an extra step is required to reduce the first idea to the level of a particular, and this consists in the argument that the idea must be like its "likeness" so that the two are "alike" Then by the ἓν ἐπὶ πολλῶν a second unitary idea immediately follows.

In the *Timaeus,* however, Plato uses the argument of the "third man" to prove that the idea of ζῷον is unique· there could not be a second such idea, for there would then have to be still another, and not these two but the third which "includes" them would be the idea on which the universe is patterned (*Timaeus* 31 A).[198] The same argument appears in the

[198] An analysis of *Republic* 597 C and *Timaeus* 31 A as Plato's answer to the "third man" was made first, so far as I know, by F. Goblot (*Revue d'Histoire de la Philosophie,* III [1929], pp 473-481), although in 1879 Apelt in his "Untersuchungen uber den Parmenides des Plato" (*Beiträge zur Geschichte der griech. Philos* [1891], pp 52-53) had already interpreted the *Republic* passage in this fashion and Shorey in 1884 (*De Platonis Idearum Doctrina,* p. 30) had connected the *Timaeus* passage with that of the *Republic* and briefly indicated their significance Among recent scholars Taylor alone, to my knowledge, has denied that the *Timaeus* passage is a reference to the "regress argument" (*A Commentary on Plato's Timaeus,* p. 86). The reason which he gives is that τόδε in 31 A 8 means the sensible world, so it does, but that is nothing to the point Plato argues that the sensible οὐρανός is single εἴπερ κατὰ τὸ παράδειγμα δεδημιουργημένος ἔσται, and he then proceeds to prove that the model, τὸ περιέχον πάντα ὁπόσα νοητὰ ζῷα, must be single This he does in just the same way as he proves in *Republic* 597 C that the idea of couch is unique Taylor's real reason for his interpretation of the passage is, as his subsequent remarks show, his thesis that the *Timaeus* is simply the doctrine of a fifth-century Pythagorean and his guess that the "regress" form of "third man" argument was invented

Republic (597 C) if there should be so many as even two ideas of couch, there would appear one in turn of which those two would "have the idea" and not those two but this one would be the real couch (ὃ ἔστι κλίνη). Plato's reason for considering the "third man" invalid as an argument against the ideas appears in the difference between the use of it in these two passages and that in the *Parmenides*. In the *Timaeus* he contends that two (or more) ideas of ζῷον would necessarily imply a third which would "include" them and these two would then not be the ideas of ζῷον at all; in the language of the *Republic* they would *have* the idea but would not *be* ὃ ἔστι ζῷον (cf. *Sophist* 255 B where μετέχειν [here μέθεξις = κοινωνία, cf. 256 B] is opposed to εἶναι). Now there do exist, besides the unique idea of ζῷον, the four "more specific" ζῷα "included" in it (*Timaeus* 39 E, cf 30 C 5-8), and yet the existence of these ideas and of the idea of ζῷον does not imply *another* idea of ζῷον; clearly the "third man" does not apply here, as it would in the hypothetical case of two ideas of ζῷον, just because the four specific ideas on the one hand and the general idea of ζῷον on the other are not ζῷα in the same sense The four "have" or "imply" or "participate in" ζῷον and so necessitate the existence of a unitary idea which "includes" them; but this unitary idea does not "have" ζῷον as they do; it *is* ζῷον If for this reason, however, the idea of ζῷον and the ideas of specific kinds of ζῷα cannot be taken together as a new multiplicity for which on the principle of the ἓν ἐπὶ πολλῶν another idea of ζῷον must be assumed, Plato must have held that the same reason even more obviously forbids taking the idea of ζῷον and the particular sensible ζῷα together as implying a *second* idea of ζῷον So when in the *Republic* he reasserts the customary principle of positing a single idea περὶ ἕκαστα τὰ πολλὰ οἷς ταὐτὸν ὄνομα ἐπιφέρομεν (596 A) and on this very basis argues that each

by Zeno the Eleatic (cf *Proc of the Aristot Soc*, XVI [1915-1916], p 267). Incidentally the correct interpretation of the passage shows Taylor's note on τὸ περιέχον (31 A 4) to be irrelevant; this word, like μέρος in 31 A 6, is used in the sense it has for the logic of the ideas (*Sophist* 250 B, 253 D, cf *Politicus* 285 A-B), it means "the most general idea of living thing" which includes the four "specific" ideas of living beings (see Appendix IX, pages 575-577 *infra* and the references to Shorey and Cornford there).

idea must be unique, he shows that in his opinion the "third man" can be used legitimately only of a multiplicity of individuals of the *same kind*· if there were two "couches existing in nature" they would imply a third, and this would result in the absurdity of "ideas of couch" which instead of *being* ὃ ἔστι κλίνη merely "have" that idea; but the particular sensible couches and the idea of couch do not together imply a second idea of couch, for strictly the same name does not apply to ὃ ἔστι κλίνη and to τοιοῦτον οἷον τὸ ὄν, ὃν δὲ οὔ (cf 597 A) any more than the same name applies in strictness to the phenomenal couch and the painted picture (596 E) Here, then, is the answer to Parmenides who to the πολλὰ μεγάλα from which the existence of αὐτὸ τὸ μέγα was deduced adds αὐτὸ τὸ μέγα itself as another instance of the same kind; Plato seems to make Parmenides hint at the fundamental error in the reasoning by saying ἐὰν ὡσαύτως τῇ ψυχῇ ἐπὶ πάντα ἴδῃς (*Parmenides* 132 A 6-7), for the fallacy lies in assuming that αὐτὸ τὸ μέγα καὶ τἆλλα τὰ μεγάλα together can be viewed in the same way as the πολλὰ μεγάλα were before In that case, however, Plato could not have believed the idea and the particular to be "alike" in the way in which two particulars may be, so that, if this is the necessary consequence of the "model-likeness" metaphor, he must have abandoned that terminology Yet in the *Timaeus* he not only uses the metaphor regularly but also constantly speaks of the phenomena as being "like" the ideas (30 C-31 B, 37 C, 39 E, 50 D 1, 51 A, 52 A), although Parmenides had concluded his refutation with the words: οὐκ ἄρα ὁμοιότητι τἆλλα τῶν εἰδῶν μεταλαμβάνει, ἀλλά τι ἄλλο δεῖ ζητεῖν ᾧ μεταλαμβάνει (*Parmenides* 133 A). Since he did not accept this conclusion, he must have rejected the argument on which it rests, namely that the idea has to be "like" the particular if the latter is a likeness of the idea; and that he did consciously reject this conversion as illegitimate is indicated not only by *Timaeus* 52 C, where the relation between the phenomenal εἰκών, which is "like" the idea, and the idea is represented as not being reciprocal (see note 191 *supra*), but also by *Sophist* 240 A-B, where "image" is defined as τὸ πρὸς τἀληθινὸν ἀφωμοιωμένον ἕτερον τοιοῦτον. Here it is pointed out that the phrase ἕτερον τοιοῦτον might seem to put model and copy on the same level of existence whereas it means not "real" but

"like," so that what "is really a likeness" has not real existence. It is clear from this that, according to Plato, the phrase ἕτερον τοιοῦτον, meaning ἐοικός, which signifies the relation of copy to model, cannot be applied to the model in its relation to the copy. This distinction, however, between the being of model and that of copy is made in the *Republic* (596 E-597 A; cf. *Cratylus* 432 B-D), so that even before Plato wrote the *Parmenides* he must have believed that the "likeness" of particular to idea does not imply that the idea and the particular are "alike"; and an indication of this answer may have been intended in the stress which Parmenides at the end of his refutation is made to lay upon the crucial admission. the regress follows if the idea comes to be like that which partakes of it (133 A. ἐὰν τὸ εἶδος τῷ ἐαυτοῦ μετέχοντι ὅμοιον γίγνηται).

Plato, then, believed that since the idea *is* that which the particular *has* as an attribute, the "third man" is illegitimate as an argument against the ideas because idea and particular cannot be treated as homogeneous members of a multiplicity The formalized demonstration of the ἓν ἐπὶ πολλῶν reported by Alexander states as one of the conditions necessary to its conclusion that the predicate be not identical with the subject of which it is predicated (*Metaph*., p. 80, 10-12: . . . καὶ οὐκ ἔστιν ἐφ' ἑκάστου αὐτῶν αὐτὸ αὐτοῦ τι κατηγορούμενον ἀλλ' ἔστι τι ὃ καὶ πάντων αὐτῶν κατηγορεῖται οὐδενὶ αὐτῶν ταὐτὸν ὄν, . . .); and the demonstration from model and likeness makes its conclusion depend upon the exclusion of the possibility that one of the individuals is the model of the others and upon the admission that a likeness is derivative (*Metaph.*, p. 83, 4-6 and 11-14). This careful wording is meant to forestall the "third man" by preventing the idea from being treated on the same level as the particulars.[197]

[197] See the formula of Proclus (*In Parmenidem*, V, 125, Cousin = p 684, Stallbaum). ὃ γάρ ἐστι τὸ ἓν εἶδος πρώτως, τοῦτο τὰ ὑπ' αὐτὸ πολλὰ δευτέρως καὶ οὐ δεῖ κοινότητα πάλιν ἄλλην ἐπὶ τούτων θηρᾶν· ἡ γὰρ κοινότης ὁμοταγῶν μέν ἐστιν, οὐχ ὁμοταγὴς δὲ τοῖς ὧν ἐστι κοινότης. In the *Eudemian Ethics* (1217 B 2-16) the idea of good is said to have been called πρῶτον τῶν ἀγαθῶν because the abolition of that which is participated in (i e the idea) entails the abolition of the things that get their designation by participating in the idea and this is the way in which the primary is related to what is subsequent (cf Plato's distinction of the prior and posterior, *Metaphysics* 1019 A 2-4 [see note 33 *supra*]); and in the *Metaphysics* (1031 A 29-31) Aristotle says that those who posited

Much the same defense has been proposed in modern times (Taylor, *Proc. of the Aristot. Soc.*, XVI [1915-16], pp. 253-5 and 286-9; *The Parmenides of Plato*, pp. 20-21 and 26), although it has not always been admitted as sound, at any rate from the point of view of Socrates in the *Parmenides* (cf W. F. R Hardie, *A Study in Plato*, pp. 94-7) What is most important, however, and usually neglected is that it was Plato's own answer to the objection and that Aristotle must have known it. That the latter considered it to be an unsuccessful defense is obvious and perhaps intelligible, but he might have been expected to acknowledge its existence and meet it with more of a rebuttal than the mere reassertion that the idea is just an "immortal particular." Nevertheless, in his contention that the separation of the idea prevents it from being *identified* with the common predicate and so reduces it to a particular instance (see note 121 *supra*), in the exclusive disjunction of homonymity and synonymity whereby he seeks to show that the idea and the particular either have *no* connection or else "have the same εἶδος" (*Metaphysics* 991 A 2-8), and especially in his

the ideas considered them to be οὐσίαι ὧν ἕτεραι μὴ εἰσιν οὐσίαι μηδὲ φύσεις ἕτεραι πρότεραι (cf Alexander, *Metaph*, p 56, 1 [αἱ ἰδέαι πρῶται τῶν πρὸς αὐτὰ ὄντων] and Theophrastus, *Metaph*, 4 A 15-17, where τὰ πρότερα are τὰ δίδια and τὰ ὕστερα are τὰ φθαρτά) Now there is evidence that this "primacy" of the idea was used in the Academy to prove the indivisibility (and so the uniqueness) of each idea In *De Lin. Insec* 968 A 9-14 we find the argument that, since the idea is πρώτη τῶν συνωνύμων (see notes 47 and 102 *supra*) and since the part is naturally prior to the whole, the idea of line, for example, is indivisible, else there would be a line prior to the primary line (cf *De Generatione* 316 A 12 and see pages 127-128 *supra*) It is obvious that this argument could be used against the "third man" also, since the idea of man is πρῶτος τῶν ἀνθρώπων there can be no idea of this idea and the particular men for that would be prior to what is by definition primary, or—to put the same conclusion differently—there would be many "primary men," which is absurd Aristotle's wording of the conclusion (*De Generatione* 316 A 12 ὅτι τὸ αὐτοτρίγωνον πολλὰ ἔσται) indicates that the argument was so used

See also the argument of Plotinus to prove that Aristotle's category of substance cannot apply to intelligible as well as sensible being (*Enn.* VI, 1, 1: ἄτοπον τὸ αὐτὸ σημαίνειν τὴν οὐσίαν ἐπί τε τῶν πρώτως ὄντων καὶ τῶν ὑστέρων, οὐκ ὄντος γένους κοινοῦ ἐφ' οἷς τὸ πρότερον καὶ ὕστερον), where, however, οὐκ ὄντος γένους κοινοῦ ἐφ' οἷς τὸ πρότερον καὶ ὕστερον is Aristotle's own principle which Plotinus here turns against him (cf *Metaphysics* 999 A 6-7 [Appendix VI, pages 521 ff. *infra*])

attempt to block possible objections to the cogency of this argument (*Metaphysics* 991 A 3-5 = 1079 A 34-37, 1079 B 3-11; see pages 308-312 *infra*) may be recognized arguments to enforce the validity of the "third man," arguments which imply a spirited defense from the opposing party. Here, however, there is no attempt to reestablish the validity of the objection; it is simply put as a necessary implication of the Platonic demonstration itself, just as it was in the *Parmenides*, and so apparently it was put, though in more detail, in the περὶ ἰδεῶν.

The sentence at 990 B 15-17 summarizes a single argument to prove that the logical principles of the Platonists themselves make it impossible for them to posit ideas of any kind whatsoever. It proceeds from the Platonic logical dichotomy of καθ' αὑτό and πρός τι. By means of the ambiguity of καθ' αὑτό all ideas of terms in the second class are eliminated; but the demonstration of ideas for terms in the first class implies a regress which the Platonists themselves do not allow. That this argument is purely dialectical Aristotle himself in effect admits when he recasts it later on, retaining the structural outline but attempting to establish the proof in a positive fashion.

Metaphysics 990 B 17-22, 1079 A 14-19

Preceding the recast form of this argument, however, and following directly the sentence concerning "the more precise arguments" there is an attempt to show that the demonstrations of the ideas destroy what to those who posit them [198] is more important than the very existence of the ideas. The consequence of these demonstrations, Aristotle says, is that not the dyad but number is first and that the relative is prior to the καθ' αὑτό and "all the contradictions with the principles in which some have been involved by following the doctrine of ideas." In our text this passage is closely connected with the preceding section (cf. 990 B 17: ὅλως τε), but, while the material of that section was found by Alexander in the περὶ ἰδεῶν, this argument was clearly absent from that work, for to support his interpretation of it Alexander refers not to the περὶ ἰδεῶν, as he did for the preceding section, but to the περὶ τἀγαθοῦ as he did at *Metaphysics* 987 B 33

[198] On the readings βούλονται οἱ λέγοντες εἴδη and βουλόμεθα οἱ λέγοντες εἴδη (990 B 18-19) see Appendix II (page 490)

and 988 A 13 (*Metaph.*, p. 85, 16-18; cf. pp 56, 35 and 59, 33 f.).[199] His interpretation of the argument depends upon identifying the "one" and the "indefinite dyad" of the περὶ τἀγαθοῦ with the ἀρχαί mentioned here where he supposes that the dyad, which Aristotle contends must be posterior to number, is that "indefinite dyad" According to this interpretation Aristotle here argues that the idea, "number," must be prior to the "indefinite dyad" which the Platonists nevertheless suppose to be the principle of number and that, since number is relative, the relative would be prior to what they consider καθ' αὑτό, the "indefinite dyad" (*Metaph.*, pp. 85, 15-86, 13). Although this interpretation has been generally accepted,[200] it cannot be right, for this passage occurs also in M, chap. 4 where Aristotle has expressly excluded from his consideration of the ideas "the nature of number" and therewith the notion of the one and the indefinite dyad as principles (see pages 196-198 *supra*) In view of the character ascribed by Aristotle himself to M, chap. 4, the dyad here can be only the "idea of two" (cf 1079 A 34-36 = 991 A 3-5. ἐπί τ' αὐτῆς [*scil.* τῆς δυάδος] καὶ τῆς τινός), in the sense that *ideas of numbers*, quite apart from "idea-numbers,"

[199] This does not prove that *nothing* in Alexander's comment on this passage could have come from the περὶ ἰδεῶν *Metaph*, p 86, 13-23 may very well have been found there, for it is a general argument against the ideas as παραδείγματα and would have been in place in the section which dealt with the λόγοι τῶν πρός τι κατασκευάζοντες ἰδέας and the "contradiction" of absolute ideas which are relatives (see note 191 *supra*). It does not reckon with "numbers" at all, and it treats the ideas *themselves* as the ultimate ἀρχαί, it has no connection with the "one" and the "indefinite dyad" on which Alexander thinks that Aristotle's argument in our passage depends Whether or not Alexander is right in this interpretation, it is more than unlikely that, had the περὶ ἰδεῶν contained this argument, he would have referred not to it, to which alone he refers for the section immediately preceding, but to the περὶ τἀγαθοῦ, the *Metaphysics*, and the *Nicomachean Ethics* to support his interpretation (cf *Metaph*, pp 85, 17-18 and 86, 10)

[200] Cf Schwegler, *Die Metaphysik*, III (1847), pp 84 85, Zeller, *Plat. Studien*, p. 223, n 1, *id*, *Phil Griech*, II, 1, p. 750, n 2, Robin, *Idées et Nombres*, n. 331 (p 415) and n 261 (p 642); Ross, *Metaphysics*, I, p. 196 (where the slightly different interpretation of Bonitz is discussed) but see note 203 *infra* Those who accept this interpretation must on *that* basis exclude this argument from the περὶ ἰδεῶν (cf. Philippson, *Rev. de Philologie*, LXIV [1936], pp 123 and 124; and especially Karpp, *Hermes*, LXVIII [1933], pp 384-391).

belong to the theory which Aristotle is considering in M, chaps. 4 and 5 and so also in the doublet, A, chap. 9, 990 B 2-991 B 9. The argument, then, is that, whereas the Platonists call the idea of two the first number, their own arguments for the existence of ideas (obviously the ἓν ἐπὶ πολλῶν) should require them to posit an idea of number in general which would then be prior to all the ideas of number including that of two, and, furthermore, since number is a relative term (cf. *Metaphysics* 1092 B 19-20; Alexander, *Metaph.*, p. 86, 5-6), this idea of number must by the same argument imply an idea of relation as such which will then be prior to the καθ' αὐτό, for example to the idea of two.[201]

This argument, like the preceding one, seeks to show that the existence of the ideas is in contradiction with the principles according to which that existence is demonstrated. Whereas in the preceding argument, however, the contention was that ideas of relative terms are inconsistent with the "absolute existence" of ideas, according to the present more "general" argument even ideas which are καθ' αὑτό must imply "prior" ideas which are relative and so *not* καθ' αὑτό, so that not only are there ideas which do not have the essential ideal characteristic of "absolute existence" but it is by participation in these that the ideas which do have that characteristic are what they are. Although this conclusion naturally suggests Aristotle's doctrine of the necessary priority of substance to relation which exists only as an accident of the former (cf. Alexander [*Metaph.*, p. 86, 7-10] who refers to *Eth. Nic.* 1096 A 20-23), it is not this which is urged as the supposed contradiction of the Platonists but rather that the consistent application of their own arguments would prove the "highest realities" to be not καθ' αὑτό whereas this for them is the essential character of reality.

The ambiguity by means of which this argument operates is the same as that used to eliminate ideas of τὰ πρός τι (see pages

[201] The expression in M is more explicit than that in A, but the latter (990 B 18-21. συμβαίνει γὰρ μὴ εἶναι τὴν δυάδα πρώτην ἀλλὰ τὸν ἀριθμόν, καὶ τὸ πρός τι τοῦ καθ' αὑτό) should be interpreted in accordance with M (1079 A 15-17 συμβαίνει γὰρ μὴ εἶναι πρῶτον τὴν δυάδα ἀλλὰ τὸν ἀριθμόν, καὶ τούτου τὸ πρός τι καὶ τοῦτο τοῦ καθ' αὑτό). We then have a single well developed argument and not two unconnected statements or a mere repetition.

279-283 *supra*); but the Platonic argument of the ἓν ἐπὶ πολλῶν is shown to destroy another Platonic doctrine by the way The Platonists, like Aristotle, subscribed to the common Greek view that two is the "first number." [202] For them, then, the idea of two was the first of the ideal numbers; and Aristotle says elsewhere that they did not posit a single idea of the numbers, the reason according to him being that they set up no ideas for those things in which they asserted τὸ πρότερον καὶ ὕστερον (*Eth. Nic.* 1096 A 17-19). Now Aristotle contends that, since the idea of two is a number as are all the other ideal numbers, the ἓν ἐπὶ πολλῶν requires the Platonists to posit a single idea of number apart from these numbers and that this general idea will then be "primary number," so that the idea of two cannot be the "first number." [203] When the Platonists called the ideal two the first number, however, they meant that it is the first term in the number series which consists of the ideas of number.

[202] For Aristotle see *Physics* 220 A 27 (ἐλαχιστος δὲ ἀριθμὸς ὁ μὲν ἁπλῶς ἐστὶν ἡ δυάς [cf Simplicius, *Phys*, pp 729, 34-730, 21]), *Metaphysics* 1057 A 3-6 (ἔστι γὰρ ἀριθμὸς πλῆθος ἐνὶ μετρητόν, καὶ ἀντίκειταί πως τὸ ἓν καὶ ἀριθμός, οὐχ ὡς ἐναντίον ἀλλ' ὥσπερ εἴρηται τῶν πρός τι ἔνια ᾗ γὰρ μέτρον τὸ δὲ μετρητόν, ταύτῃ ἀντίκειται), cf *Metaphysics* 1088 A 4-8, 1052 B 20-24, 1053 A 27-30, 1016 B 17-20, 1021 A 12-13, *Physics* 207 B 5-8, for Plato see *Republic* 524 D (ἀριθμός τε καὶ τὸ ἕν), *Parmenides* 144 A (εἰ ἄρα ἔστιν ἕν, ἀνάγκη καὶ ἀριθμὸν εἶναι). In general see Heath, *Greek Mathematics*, I, pp 69-70 Chrysippus, who called the unit πλῆθος ἕν, is said to have been the first to treat one as a number (Heath, *loc cit.*, Ross, *Physics*, p 604), but Speusippus' argument that ten is the perfect number assumes that one is an odd number the perfect number must be even, he says, in order that the odd and even numbers in it may be equal, ἐπεὶ γὰρ πρότερος δεί ἐστιν ὁ περιττὸς τοῦ ἀρτίου, εἰ μὴ ἄρτιος εἴη ὁ συμπεραίνων, πλεονεκτήσει ὁ ἕτερος (Speusippus, *frag* 4, lines 22-25 [Lang])

[203] Compare Aristotle's argument at *Metaphysics* 1087 B 21-25: those who choose their principles on the basis of universality should have made "number" prior to the ideal two (cf. [Alexander], *Metaph*, p 798, 12-16 τοῦ αὐτοῦ λόγου ἐστὶ . τὸ καὶ τὸν ἀριθμὸν ὡς γενικώτερον καὶ καθολικώτερον τῆς αὐτοδυάδος πρῶτον εἶναι αὐτῆς . . . δεύτερον δὲ τὴν αὐτοδυάδα) Robin (*Idées et Nombres*, n 331, II [pp 414-415]) rightly rejects Apelt's "emendation" of this passage (*Beitrage*, p 251), yet he, too, wrongly supposes that τῆς δυάδος ἐκ τῶν στοιχείων (1087 B 24) refers to "la dualité . *qui fait partie des Principes*" Ross (*Metaphysics, ad loc*) correctly identifies τῆς δυάδος here as "the ideal two", it is strange then that he should in so doing write "Cf. 990 B 20," for there he took ἡ δυάς to mean the indefinite dyad This passage is corroborative evidence rather for taking ἡ δυάς in 990 B 20 to mean the "determinate two," i. e. the idea of two.

The word ἀριθμός can mean either the number series (cf. *Metaphysics* 1080 B 12, 21-22; Plato, *Phaedo* 104 A, *Theaetetus* 147 E) or a term in this series, in the latter sense there is an idea of each number, but in the former there is no idea of ἀριθμός apart from the series of ideal numbers just because this series is *itself* the idea of ἀριθμός and the "idea of number" could mean nothing other than *the* series of ideal numbers. So the "idea of number" as the series of ideal numbers *includes* the idea of two which is the first term in it. The idea of two, however, is "first" in two different senses; as the "first number" it is the first term in the series, as the "first two" it is ontologically prior to all the other "twos" which are what they are by participating in it. In this latter sense the ideal three is also "first," for it is ontologically prior to all other threes (*Metaphysics* 1080 A 26-29 ἡ δυὰς ἡ πρώτη = ἡ δυὰς αὐτή, ἡ τριὰς ἡ πρώτη = ἡ τριὰς αὐτή, cf. 1081 A 4-5. τὰς ἐν ἑκάστῳ τῷ πρώτῳ ἀριθμῷ ⟨*scil.* μονάδας⟩, cf [Alexander], *Metaph.*, p. 747, 36 f: τὰς ἐν ἑκάστῳ εἰδητικῷ ἀριθμῷ, 1083 A 32-34· . . ἀνάγκη μᾶλλον ὥσπερ Πλάτων ἔλεγεν ἔχειν τὰ περὶ τοὺς ἀριθμούς, καὶ εἶναί τινα δυάδα πρώτην καὶ τριάδα . . [contrast 1083 A 24-27]); this is true of each of the ideas of number, and so the number series which *is* the idea of number is ontologically prior to all other numbers Even if it were possible, however, to have a general idea of number apart from this series, the idea of two would still be the "first number" in the sense in which the Platonists gave it this title, for the general idea of number would not be a member of the series of which two is the first term. Aristotle, in contending that the existence of such an idea would deprive the idea of two of its "primacy," assumes that the Platonic "first number" signified the *ontological* priority of two to the other numbers, whereas it indicated only serial order as is shown by the distinction between the priority of two to the other numbers and its ontological primacy to the other twos. This argument, then, depends upon the exploitation of an ambiguity in the terminology, "prior and posterior," [204] as the other did upon the interchange of different senses of πρός τι and καθ' αὑτό. The ultimate purpose of the section is to show that, while the chief

[204] See Appendix VI.

concern of the Platonists was to confute relativism by establishing an absolute reality, the doctrine of ideas, which they espoused for this end, when carried to its logical conclusion reduces reality to mere relation and so destroys what concerns the Idealists more than the ideas themselves (cf Alexander, *Metaph.*, p. 86, 13-23 [see notes 191 and 199 *supra*]).

Metaphysics 990 B 22-991 A 8, 1079 A 19-B 3

The argument at 990 B 15-17, in which the logical principles of the Platonists themselves are used to refute the possibility of the existence of ideas, consists of two parts, the first of which eliminates all ideas of terms in the class of πρός τι, while the second contends that the demonstration of ideas for terms not open to this objection implies a regress which the Platonists themselves do not allow (see page 300 *supra*) In disposition and method the attack upon the ideas in 990 B 22-991 A 8 is a repetition of the argument at 990 B 15-17, the content of the first section, however, which in the former argument is purely dialectical, depending upon the exploitation of an apparent ambiguity in the Platonic term καθ' αὑτό (pages 279-283 *supra*), is replaced by a new proof that the Platonists must in consistency eliminate an entire class of ideas which they posit.

Aristotle here contends that, although according to the theory on which the existence of ideas is asserted [205] there would be ideas not only of substances but of many other things also (since the concept is a unit in the case of non-substances as well as in that of substances and other things besides substance are the objects of science),[206] still, if the ideas are participable (μεθεκτά), both the logic of the case and the doctrines actually

[205] κατὰ τὴν ὑπόληψιν καθ' ἣν εἶναί φαμεν τὰς ἰδέας (990 B 23) = . . . καθ' ἣν φασιν εἶναι τὰς ἰδέας (1079 A 20) Concerning the first person plural in A see Appendix II, for ὑπόληψις = δόξα cf 1073 A 17 (ἡ περὶ τὰς ἰδέας ὑπόληψις) and *Index Aristt* 800 B 5-10

[206] καὶ γὰρ τὸ νόημα ἓν οὗ μόνον περὶ τὰς οὐσίας ἀλλὰ καὶ κατὰ τῶν ἄλλων ἐστί, καὶ ἐπιστῆμαι οὐ μόνον τῆς οὐσίας εἰσὶν ἀλλὰ καὶ ἑτέρων, καὶ ἄλλα δὲ μυρία συμβαίνει τοιαῦτα (990 B 24 27) = τὸ γὰρ νόημα ἓν οὗ μόνον περὶ τὰς οὐσίας ἀλλὰ καὶ κατὰ μὴ οὐσιῶν ἐστί, καὶ ἐπιστῆμαι οὐ μόνον τῆς οὐσίας ἔσονται· συμβαίνει δὲ καὶ ἄλλα μυρία τοιαῦτα (1079 A 21 24). For Alexander's commentary on this passage see note 144 *supra* and further for τὸ νόημα ἓν pages 272-275 *supra* on "the object of thought"

held concerning the ideas require that there be ideas of substances only (990 B 22-29 = 1079 A 19-26).[207] This restriction is established in the following manner (990 B 29-991 A 2 = 1079 A 26-33):—Since participation in the ideas is not incidental but can occur only when the idea shared is not predicated of a subject, the ideas themselves must be substance.[208] Substance in the world of ideas, however, and substance in the world of phenomena must be indicated by the same terms, otherwise what would it mean to say that "the one over many" (τὸ ἓν ἐπὶ πολλῶν) is something apart from the particular phenomena? In other words, the separation of the ἓν ἐπὶ πολλῶν shows that the distinction between substance and non-substance in this world holds also for the ideal world, and, since whatever is an idea must be substance, there can be ideas only of what are substances in this world.[209]

[207] "The doctrines actually held concerning the ideas" (*τὰς δόξας τὰς περὶ αὐτῶν*) does not imply that any of the Platonists restricted ideas to those of substances but refers only to the doctrine that every idea is participable (*εἰ ἔστι μεθεκτὰ τὰ εἴδη*); cf Alexander, *Metaph*, p 89, 7 8 (*κατὰ δὲ τὸ ἀναγκαῖον καὶ ἀκόλουθον ταῖς δόξαις ταῖς περὶ αὐτῶν, καθ' ἃς μεθεκτὰ λέγουσι τὰ εἴδη, . .*) and see *Metaphysics* 1040 A 26 27 where Aristotle makes this δόξα the basis for another argument against the ideas (*οὐ δοκεῖ δέ, ἀλλὰ πᾶσα ἰδέα εἶναι μεθεκτή*).

[208] What Aristotle calls 'incidental participation" is explained by the following example (990 B 31-34 = 1079 A 28-30) Whatever participates in the idea of double participates *incidentally* in eternality also, because "eternal" is an attribute of the idea of double This example is meant to prove that such "incidental participation" cannot be what the Platonists mean by participation, since that which is double by participating in the idea of double is obviously not eternal even though it participates in an idea which has the attribute of eternality Aristotle consequently concludes that no idea existing as an attribute is participable, that, therefore, any idea which is to be participable must exist as substance, and that, since according to the Platonists *all* ideas are participable, *all* ideas must be substance

[209] That every idea must be substance was proved by showing that *qua μεθεκτόν* every idea must exist *μὴ καθ' ὑποκειμένου* Now what is predicated of a subject and is not a *τόδε τι* (or *τί ἐστι* [*Metaphysics* 1028 A 14-15 *τὸ τί ἐστιν, ὅπερ σημαίνει τὴν οὐσίαν*] cf Ross on 1028 A 11 and Calogero, *I Fondamenti*, p 122) does not indicate substance in this world (*Metaphysics* 1001 B 29-32. *τὰ μὲν γὰρ πάθη καὶ αἱ κινήσεις καὶ τὰ πρός τι καὶ αἱ διαθέσεις καὶ οἱ λόγοι οὐθενὸς δοκοῦσιν οὐσίαν σημαίνειν· λέγονται γὰρ πάντα καθ' ὑποκειμένου τινός, καὶ οὐθὲν τόδε τι* [cf. 1029 A 1-30]); but to conclude that there are no ideas corresponding

This argument, in eliminating ideas of non-substances, implies at the same time an objection to ideas of substances which is then developed in the following lines (991 A 2-8 = 1079 A 33-B 3). The separation of the ἓν ἐπὶ πολλῶν was taken to show that the same terms indicate substance in both worlds because it implies that ideal substance must have the same characteristics as phenomenal substance; but, if the ἓν ἐπὶ πολλῶν is a

to such terms requires the further assumption that ideal and phenomenal substance must be designated by the same terms

The statement, *ταὐτὰ ἐνταῦθα οὐσίαν σημαίνει κἀκεῖ* requires some proof, however, for Plato used the word *οὐσία* of ideas the existence of which would be incompatible with Aristotle's dictum and the Platonist would certainly argue that the Aristotelian distinction does not apply in the world of ideas at all and that what he calls *οὐσία* in the phenomenal world is not *οὐσία* in the sense in which this word applies to all the ideas without distinction (see pages 221 222 *supra*, cf Alexander, *Metaph*, p 89, 23 [*λέγουσι δ' αὐτὰς ⟨scil τὰς ἰδέας⟩ οὐσίας*] and Syrianus, *Metaph*, p 114, 14-16 [*τὴν γοῦν αὐτοεπιστήμην καὶ τὴν αὐτοδικαιοσύνην οὐσίας εἶναί φαμεν, ἀλλ' αἱ παρ' ἡμῖν ἕξεις οὐκ οὐσίαι*]). Aristotle himself recognizes that his distinction between *τὰ οὐσίαν* and *τὰ μὴ οὐσίαν σημαίνοντα* is a contradiction of the theory of ideas, when he says *ὅσα μὴ οὐσίαν σημαίνει, δεῖ κατά τινος ὑποκειμένου κατηγορεῖσθαι, καὶ μὴ εἶναί τι λευκόν, ὃ οὐχ ἕτερόν τι ὂν λευκόν ἐστιν. τὰ γὰρ εἴδη χαιρέτω* (*Anal Post* 83 A 30-33, see note 54 *supra*). The necessary proof in support of the second premise must be contained in the following sentence *ἢ τί ἔσται τὸ εἶναι φάναι τι παρὰ ταῦτα τὸ ἓν ἐπὶ πολλῶν;* Alexander gives two interpretations of this sentence, the first of which (*Metaph*, p 91, 18-25) makes it an argument for the necessity of substantial participation and is therefore beside the point According to the second (*Metaph*, p 91, 25-31), which rightly connects it with the sentence immediately preceding, Aristotle means to point out that the ἓν ἐπὶ πολλῶν is said to be something apart from the sensibles on the assumption that the same nature is manifested by the unity and by the multiplicity of which that unity is predicated It seems possible, however, to see in the sentence a more specific argument to show that the *separation* of the ideas itself implies Aristotle's own distinction between substance and non-substance and therefore necessarily limits ideal substance to what he calls *οὐσία*. In *Metaphysics* 1040 B 27-29 Aristotle remarks that those who posit ideas are quite right in "separating" them if the ideas are *οὐσίαι*, in other words, he takes the separation as a recognition of his own distinction between substance and non-substance and an admission that ideal substantiality must have the same essential characteristics as what he calls *οὐσία* The "separateness" of the ideas must then mean the same thing as the characteristic "separateness" of his own *οὐσία* (cf 1086 B 16-19 *εἰ μὲν γάρ τις μὴ θήσει τὰς οὐσίας εἶναι κεχωρισμένας, καὶ τὸν τρόπον τοῦτον ὡς λέγεται τὰ καθ' ἕκαστα τῶν ὄντων, ἀναιρήσει τὴν οὐσίαν ὡς βουλόμεθα λέγειν* see Appendix II). In that case, however, ideal substance and phenomenal substance must be signified by the

separate substance and the same term applies to it and its participants, the doctrine of separation requires the existence apart from the idea and its participants of another substantial ἓν ἐπὶ πολλῶν. In short, the assumption of separate ideas not only limits ideas to those of substances but in the case of these implies the difficulty of the "third man" This objection Aristotle attempts to establish in the second part of his argument by a dilemma concerning the relationship between the idea and its participants. Either they are specifically the same or they are not. If they are, there must exist something common to the idea and its participants, if not, they would be merely homonymous and have no real connection at all The eternality of the ideas cannot, according to Aristotle, save the Platonists from the necessity of positing something common to the idea and its participants (and so falling into a regress), for "two" is one and the same in the case of the perishable and the mathematical twos, the latter of which, though multiple, are eternal, so that it ought also be one and the same in the case of the idea of two and the particular.[210] This argument when repeated in M is supported by a further proof that the theory of ideas cannot escape the regress. It is futile to suppose, Aristotle says, that to the common definitions, when applied to the ideas, the phrase ὃ ἔστι must be added. In the first place, since all the elements in the substance are ideas it would be necessary to make this addition to every element in

Metaphysics 1079 B 3-11

same terms, for, if what does not indicate separate substance in this world does indicate substance in the world of ideas, the separate existence characteristic of phenomenal substance is *not* a characteristic of ideal substantiality and there is no sense in asserting that the ἓν ἐπὶ πολλῶν exists "apart from" the particulars. The separation of the ἓν ἐπὶ πολλῶν, if it has any meaning at all, must mean that the distinguishing characteristics of ideal substance are the same as those of phenomenal substance and that therefore the same terms indicate substance in both worlds

[210] Ross (*Metaphysics*, I, p. 197) contends that the purpose of this passage is simply "to confirm the close relation between particulars and ideas asserted in the words ταὐτὰ ἐνταῦθα οὐσίαν σημαίνει κἀκεῖ." Yet the specific identity of the idea and its participants is not the *conclusion* of 991 A 2-5 but the *premise* from which is deduced the necessary existence of a κοινόν τι, and this deduction, elsewhere called "the third man," is supposed to be a valid refutation of the existence of substantial ideas because it is a necessary *consequence* of making the universal an individual substance (*Soph. Elench.* 178 B 36-179 A 10, *Meta-*

the definition; and, furthermore, it would be necessary that, just like any other element in the definition, this addition itself, the distinctive characteristic of ideality, be posited as a separate idea which will be present in all the ideas as their genus.[211]

physics 1038 B 34 1039 A 2 [see pages 288 292 *supra*], cf the argument at *Metaphysics* 1091 A 2-3 that if the principle of ideal number is One [ἕν τι] and that of mathematical number is also One [ἕν τι], then neither of these can be Unity but κοινόν τι ἐπὶ τούτων ἔσται τὸ ἕν) The second horn of the dilemma (991 A 5-8) is intended to prevent the Platonists from escaping the aforesaid difficulty (ἔσται κοινόν τι) by denying the premise, and it is noteworthy that the addition to this passage in M (1079 B 3 11) is an argument to show that the very attempt to evade the dilemma involves the ideas in a regress (so Ross on 1079 B 10 11)

Ross' interpretation is apparently due to his reluctance to see repeated here the "third man" argument already referred to in 990 B 17 It is amusing to notice that St Thomas Aquinas for the same reason, recognizing the regress here, denied that that could be what is meant by the "third man" in 990 B 17 (*In Metaphysicam Aristi Comment*, I, xiv, § 215 [see note 194 *supra*] "et hoc etiam [the regress] non videtur hic [i e 990 B 17] esse eius intentio quia ad hoc inconveniens statim alia ratione ducit [i e 991 A 2-3, *ibid*, §§ 221 222]: unde esset superfluum hic ad idem inconveniens ducere") Alexander, however, though later he tries to make 991 A 2 ff part of the previous argument for restricting ideas to those of substances (*Metaph*, p 93, 8 ff), expressly recognizes that it *is* the regress referred to in 990 B 17 (*Metaph*, pp 93, 2-7 and 85, 12, cf Syrianus, *Metaph*, pp 114, 35-115, 1, Asclepius, *Metaph*, p 83, 13-15, and Bonitz, *Metaphysica*, p 115, on the improbability of his own interpretation of 991 A 2-8 as a confirmation of the immediately preceding argument) The "repetition" must be accepted and explained, not interpreted out of existence; and the decisive step in the explanation has been taken when once it has been observed that the whole passage, 990 B 22-991 A 8, is simply a recast form of the argument summarized in 990 B 15-17

It is of importance for the historical significance of the "third man" argument to observe that, while Aristotle uses it to refute the existence of substantial ideas, Plotinus employs the very same argument to prove that Aristotle's category of substance cannot apply to intelligible existence at all (*Enn* VI, 1, 2 ὅτι μὲν οὖν ἓν ἐπί τε τῆς νοητῆς ἐπί τε τῆς αἰσθητῆς κοινὸν εἶναι ἀδύνατον τὸ τῆς οὐσίας, εἴρηται [VI, 1, 1, see note 197 *supra*] καὶ προσέτι ἄλλο τι ἔσται πρό τε τῆς νοητῆς καὶ πρὸ τῆς αἰσθητῆς, ἄλλο τι ὃν κατηγορούμενον κατ' ἀμφοῖν, ὃ οὔτε σῶμα οὔτε ἀσώματον ἂν εἴη [cf Simplicius, *Categ*, p 76, 13-17 where the same argument is ascribed to the school of Nicostratus]) Simplicius protests against this argument in *Categ*, p 77, 12-78, 3

[211] For τὸ δ' οὐ ἐστὶ προστεθήσεται of 1079 B 6 I read Shorey's emendation, τὸ δ' ὃ ἔστι προστεθήσεται (*Class Phil*, XX [1925], pp 271 3); Ross also, in the second edition of his translation of the *Metaphysics* (Oxford, 1928), adopts this emendation and compares 1086 B 27 αὐτὸ ὃ ἔστιν ἓν ἕκαστον τιθέασιν.

This supplement in M is simply another means of meeting the Platonic defense against the regress which Aristotle had already tried to invalidate in 991 A 3-5 = 1079 A 34-36. When he there supports the regress by arguing that the eternality of the mathematical twos does not prevent these and the perishable twos from having the same form, an identical "two" which is predicated of both classes, so that there is no reason for denying this in the case of the ideal two (*αὐτὴ δυάς*) and the particular two, he takes cognizance of the Platonic defense that the idea, just because it is *αὐτό τι*, cannot be taken along with the par-

That this "addition" is simply the equivalent of the *αὐτό* which distinguishes the idea (cf 1040 B 33-34 *προστιθέντες τοῖς αἰσθητοῖς τὸ ῥῆμα τὸ αὐτό*) is indicated by 1079 B 9-11 itself (*ἀνάγκη αὐτὸ εἶναί τι* .) and proved by a comparison of 1079 B 3-6 with *Eth Eud* 1218 A 11 *τὸ οὖν αὐτὸ πρόσκειται πρὸς τὸν λόγον τὸν κοινόν* (see note 121 *supra* and cf Alexander, *Metaph*, p. 197, 10 14) In *Republic* 507 B the terminology *αὐτὸ καλόν, αὐτὸ ἀγαθόν*, etc is explicitly identified with *ὃ ἔστιν ἕκαστον*, and in *Republic* 579 C, where the "third man" argument is used to establish the uniqueness of the idea, it is the addition of *ὃ ἔστι* which distinguishes the idea (cf *Timaeus* 39 E *ὃ ἔστιν ζῷον*) and so forestalls the regress (see pages 295 298 *supra*) Aristotle himself may be cited as witness that *Metaphysics* 1079 B 3 6 does not represent any novel attempt of the Platonists to distinguish the definition of an idea from that of the particulars, for at *Metaphysics* 1040 B 2-4, in support of his contention that ideas would be indefinable, he appeals to the fact that no Platonist has ever tried to produce the definition of an idea

With the conclusion that this "addition" must itself be an idea compare the argument recorded by Alexander on 990 B 21 (*Metaph*, p 87, 4 8) *εἰ τὸ κοινῶς τινων κατηγορούμενον ἀρχή τε καὶ ἰδέα ἐκείνων, κατὰ δὲ τῶν ἀρχῶν κοινῶς ἡ ἀρχὴ κατηγορεῖται καὶ κατὰ τῶν στοιχείων τὸ στοιχεῖον, εἴη ἂν τῶν ἀρχῶν πρῶτόν τι καὶ ἀρχὴ καὶ τῶν στοιχείων οὕτως δὲ οὔτε ἀρχὴ οὔτε στοιχεῖον εἴη.* So here the *ἓν ἐπὶ πολλῶν* would require the existence of a "something itself" (*αὐτό τι*) as it does the idea of plane, a definite entity which is predicated in common of all the ideas (For the text, *ἀνάγκη αὐτὸ εἶναί τι* [1079 B 9-10] cf. 1085 A 31 [*πότερον αὐτὰ νοεῖ τι ἢ ἕτερον*], for *αὐτό τι* as the general designation of an idea see *Parmenides* 135 A· [*ὁριεῖταί τις αὐτό τι ἕκαστον εἶδος*], *Republic* 493 E [*αὐτό τι ἕκαστον καὶ μὴ τὰ πολλὰ ἕκαστα*].) In the designation *αὐτό τι* it is the "addition" *αὐτό* that indicates "ideality" (see besides *Metaphysics* 1040 B 33-34 and *Eth Eud*. 1218 A 11 [quoted above] *αὐτοέκαστον* in *Eth Nic*. 1096 A 35, *Topics* 162 A 27 [cf *Magna Moralia* 1183 A 30-32], cf *Phaedo* 65 E, *Republic* 480, 533 B), if the "ideality" predicated in common of all the ideas is itself designated an idea by the phrase *αὐτό τι*, it is clear from this passage itself that that which was "added" to each idea to differentiate it from the particulars is equivalent to *αὐτό*, that is to *τὸ ὅ ἔστι* (n. b that *αὐτὸ εἶναί τι, ὅπερ τὸ ἐπίπεδον* implies *αὐτοεπίπεδον*).

ticulars as one member of a group to which the ἓν ἐπὶ πολλῶν will again apply This αὐτό which signifies the "ideality" of the idea Aristotle here as elsewhere interprets as indicating merely that the idea is "eternal", but, whereas he elsewhere treats the idea and the particulars as specifically identical by dismissing this "eternality" as only a difference of duration,[212] he here seeks to invalidate the defense by the dialectical argument that there are certain entities which though eternal are still treated by the Platonists along with the perishables as members of a multiplicity having a common predicate. This, however, is no real refutation of the Platonic defense, since even if Aristotle's statements concerning the mathematicals be accepted as unexceptionable, none of the mathematical twos is αὐτὴ δυάς and it is as αὐτό τι that the idea is exempt from having a predicate in common with the particulars which participate in it. This is, as we have seen, because the αὐτὴ δυάς is ὃ ἔστι δυάς, that is because the idea *is* that which the particulars *have* as a predicate, consequently the appeal to the idea as αὐτό τι in defense against the regress is itself a denial of the validity of Aristotle's disjunction that either the idea and the particular are merely equivocal or else both *have* the same form.[213] The

[212] *Eth Nic* 1096 A 34-B 5 (ἀπορήσειε δ' ἄν τις τί ποτε καὶ βούλονται λέγειν αὐτοέκαστον, εἴπερ ἓν τε αὐτοανθρώπῳ καὶ ἀνθρώποις καὶ ὁ αὐτὸς λόγος ἐστὶν ὁ τοῦ ἀνθρώπου ᾗ γὰρ ἄνθρωποι, οὐδὲν διοίσουσιν· εἰ δ' οὕτως, οὐδ' ᾗ ἀγαθόν ἀλλὰ μὴν οὐδὲ τῷ ἀΐδιον εἶναι μᾶλλον ἀγαθὸν ἔσται εἴπερ μηδὲ λευκότερον τὸ πολυχρόνιον τοῦ ἐφημέρου), *Eth Eud* 1218 A 10-14 (τὸ οὖν αὐτὸ πρόσκειται πρὸς τὸν λόγον τὸν κοινόν τοῦτο δὲ τί ἂν εἴη πλὴν ὅτι ἀΐδιον καὶ χωριστόν, ἀλλ' οὐθὲν μᾶλλον λευκὸν τὸ πολλὰς ἡμέρας λευκὸν τοῦ μίαν ἡμέραν), *Metaphysics* 997 B 5 12 (τὰ εἴδη = αἰσθητὰ ἀΐδια) and 1040 B 30-34. On these passages see pages 201-203 and note 117 *supra* The fact that the ideas are ἀΐδια is not considered a bar to their specific identity with the particulars either in these passages or in the present argument, in the first part of which eternality is treated as an accidental predicate of the ideas (990 B 33-34 = 1079 A 30) Yet elsewhere Aristotle objects that the eternality of the ideas prevents the idea and the particulars from being specifically identical and synonymous as they are supposed to be (*Metaphysics* 1059 A 10-14 [see note 120 *supra*], *Topics* 148 A 14-22 [pages 3-5 *supra*]) For the meaning of ἀΐδιον as used by Plato see pages 211-213 *supra*

[213] For the use of this disjunction against the theory of ideas, the meaning of ὁμώνυμος as used by Plato, and Aristotle's own admission of a class intermediate between ὁμώνυμα and συνώνυμα see note 102 *supra* For Plato's answer to the "third man" argument see pages 293-300, and for a special form of this defense,

position stated in 1079 B 3-11, then, is simply the Platonic defense implicit in 1079 A 34-36 (= 991 A 3-5), not a *new* expedient by which the Platonists might seek to explain the relationship of the idea and particular and so escape the regress but rather Aristotle's own confession that to his previous attempt to dispose of that defense a Platonist would object as being merely a dialectical shift consisting in an inadequate interpretation of αὐτό in the designation of the idea as αὐτό τι. The Platonic position in its more adequate presentation Aristotle calls merely futile, and his answer to it is still the "third man"; but now he significantly abstains from arguing that it is to the idea along with the *particulars* that the ἓν ἐπὶ πολλῶν again applies, and thereby he silently admits that the idea as ὃ ἔστιν ἕκαστον cannot be treated as simply an "eternal sensible." Instead, he contends that this "additional characteristic," ὃ ἔστι, must be predicated of every idea and of every element in every idea, since all must be "ideal," and consequently that this "ideality," as the common predicate of all the ideas, must be a separate idea. The implication is, then, that, since this itself is αὐτό τι, it too would have in common with all the other ideas τὸ ὃ ἔστι as a predicate and the regress would be infinite. This separation of ideality as a predicate of the ideas is, however, the same kind of "analysis" of the idea as that by means of which Aristotle treated eternality as an accident of the idea of double (1079 A 30 = 990 B 33-34) and distinguished for dialectical purposes between properties of the idea *qua* idea and its properties *qua* idea of a given multiplicity of particulars (*Topics* 137 B 3-13, pages 1-3 *supra*).

Whatever may be the correct explanation of the absence of this passage in A,[214] it is clear that 1079 B 3-11 is an integral

turning upon the "primacy" of the idea as ὃ ἔστιν ἕκαστον and particularly appropriate as an answer to Aristotle's attempt to apply the ἓν ἐπὶ πολλῶν to the ideal numbers on the analogy of its applicability to mathematicals, see note 197 *supra* and Appendix VI (pages 519-520)

[214] F. Michelis, whose work *De Aristotele Platonis in idearum doctrina adversario* I have not been able to obtain, considered the absence from A of the "captious" criticism of 1079 B 3-11 to be support for his theory that M is a collection of Aristotle's early notes preserved by his pupils whereas A contains Aristotle's own corrected form of these notes (cf. Robin, *Idées et Nombres*, note

part of the argument that the assumption of ideas is open to the objection of the "third man" (991 A 2-8 or alternatively 1079 A 33-B 1), which itself is the second part of an attack upon the ideas, the first part of which is meant to show that the Platonic demonstrations lead to the assumption of ideas the existence of which is nevertheless inconsistent with the doctrine concerning the nature of ideas (990 B 22-991 A 2 = 1079 A 19-33). The use of the first person plural to refer to proponents of the theory of ideas (990 B 23. *καθ' ἣν εἶναί φαμεν τὰς ἰδέας*, cf. 1079 B 4· *εἰ δὲ . . θήσομεν*) indicates that this attack was not originally composed for the *Metaphysics* (see Appendix II); but, since in disposition and purpose it is parallel to that given in brief a few lines above (990 B 15-17 = 1079 A 11-13), it could not have stood originally in the *περὶ ἰδεῶν*, if—as seems pretty certain—that work contained the argument outlined in 990 B 15-17 (see page 275 and notes 135 and 137 *supra*).[215] The way

73[a] [p. 68] and note 211 [pp. 200-201]). Jaeger, on the contrary, considers the same phenomenon to be evidence for the priority of A, chap. 9, which Aristotle intended to delete when he added M (*Aristoteles*, pp 175-176, and *Studien zur Entstehungsgeschichte der Metaphysik*, pp 29-32).

Inasmuch as neither the Platonic position nor the counter-argument of Aristotle in 1079 B 3-11 is new or unusual, by far the most reasonable explanation is that the passage was omitted from A *inadvertently* either by Aristotle himself (see page 196 *supra*) or by the early editors or copyists of the *Metaphysics* (cf Trendelenburg, *Platonis de Ideis et Numeris Doctrina*, p 22, Bonitz, *Metaphysica*, p. 538).

Jaeger, who makes so much of the fact that the first person plurals in A, chap 9 are replaced by third person plurals in M (see Appendix II), does not notice that in this supplement of M the Platonic position is introduced by a verb in the first person plural (1079 B 4. εἰ δὲ . . θήσομεν . ., cf [Alexander], Metaph, p 742, 18. εἰ οὖν τοῦτο φήσουσι) Would this indicate that 1079 B 3-11 belongs in A (cf 990 B 23 φαμεν) and was mistakenly inserted in M?

[215] Furthermore, in the first part of the second attack (990 B 24-27) the reference to the *ὑπόληψις καθ' ἣν εἶναί φαμεν ἰδέας*, namely the unity of the concept and the object of science, is a partial repetition in a somewhat altered form of the substance of 990 B 11-14, which itself comes from the *περὶ ἰδεῶν*. *This point was cited by von Arnim as evidence that A, chap 9 was put together by Aristotle from a number of his earlier writings (Wiener Studien, XLVI [1928], pp 25-26), but von Arnim seems to have missed the significant unity of 990 B 22-991 A 8 and its parallelism with 990 B 15-17 as well as the fact that in the second passage the material of 990 B 11-14 is not treated separately but is subordinated so as to become in the unified argument the analogue of*

in which it differs from 990 B 15-17 would seem to show, moreover, that in its original form it was later than the original of that passage The "third man" argument against the ideas is not merely stated in the way in which Alexander quotes it from the περὶ ἰδεῶν (see pages 233-234 *supra*) but two attempts are made to maintain its validity against possible objection on the part of the Platonists. Far more striking, however, is the change in the argument to restrict the extent of the ideas. Whereas in the former passage this turned upon the apparent contradiction in Platonic terminology and sought to eliminate the ideas of relative terms as being inconsistent with the fact that the ideas are supposed to exist καθ' αὑτό, in the analogue here it is the single *Aristotelian* category of substance to which the ideas are restricted. Nor does Aristotle here contend that the assumption of ideas of non-substances is inconsistent with Plato's application of the term οὐσία to the ideas (see pages 221-222 *supra*); that would have been an argument of the same type as the first part of 990 B 15-17 and open to the same kind of answer. Instead he tries to show that the mechanism of participation itself justifies him in taking the ideas to be οὐσία in his own sense of subject or substrate and that the separation of the ideas indicates that there can be ideas corresponding only to those terms which signify separate existence in this world In short, he holds that the separation itself justifies him in interpreting and criticizing the ideas by the standards of his own conception of οὐσία, the attitude elsewhere expressed in his statement that those who posited the ideas meant that every idea is a substance and none an accident (*Metaphysics* 1002 B 12-32, see pages 220-222 *supra*). With the introduction of this criterion the nature of the previous argument is completely changed, for, even though Aristotle argues that this sense of

οἱ μὲν τῶν πρός τι ποιοῦσιν ἰδέας in 990 B 16 As a further indication that 990 B 22-991 A 8 is not derived from the same source as the early part of chap 9 may be noted the fact that, whereas ὁμώνυμος is used in the Platonic sense in 990 B 6 and was, presumably, so used in the περὶ ἰδεῶν (see note 137 *supra*), in 991 A 6 it is employed in the critical Aristotelian sense (see note 115 *supra*)

That Alexander's examples in his commentary on 990 B 24-27 probably came from the περὶ ἰδεῶν does not argue that he found the original of 990 B 22-991 A 8 in that work, since these examples are largely the same as those which he gives to illustrate 990 B 11-14 (see note 144 *supra*).

substance and the consequent limitation of the ideas are *implicit* in the theory of ideas itself and that this limitation is inconsistent with the demonstrations from which the existence of the ideas is supposed to follow, still he does not pretend that his opponents themselves recognized either the limitation or the distinction upon which it is based. He does not here say that *they* denied the existence of an idea answering to every conceptual unit and to every ἐπιστήμη, and the ideas to which in the course of his argument he refers as examples are not substance in the sense which he tries to impose upon the theory and which if accepted would make the assumption of these very ideas impossible.

The notion of οὐσία is Aristotle's chief weapon in his direct arguments against the existence of ideas in general, and the nature of these arguments must be presently considered. Thus far, to be sure, the criterion of οὐσία has been used to prove not that there can be *no* ideas such as the Platonists posit but only that there can be none answering to such terms as indicate predicates or accidents in the sensible world, but that argument rests upon the contention that the separation of the ideas implies that ideal substance and sensible substance have the same characteristics. The ideas of substances, though not thereby directly impugned, are then open at once to the objection of the regress just because of this notion that the separation produces another substantial entity specifically identical with the sensible particulars. To this the Platonic answer was that the separate idea, being ὃ ἔστιν ἕκαστον, is not merely another instance to which is applicable the same term that is used of the particulars (see pages 293-300 *supra*). That means, however, that even in the case of terms which would fall within Aristotle's category of substance the separateness of the idea is not the same thing as the "separateness" by which Aristotle characterizes sensible substance; and, consequently, even if the distinction between substance and attribute in the sensible world be granted, it does not follow that what falls outside of the category of substance in the sensible world must for that reason be excluded from substantial existence in the ideal world. Plato, moreover, explicitly denied this distinction in the sensible world, contending that nothing which is involved in genesis can rightly be designated as "this"

or "that" but only as "such and such a quality"; Aristotle's sensible substances are for him simply accidents or combinations of accidents.[216] Whereas for Aristotle the subject-predicate relationship represents a real distinction of separateness and inherence in the sensible world, for Plato the sensibles indicated by those terms of which others are predicated are not any more "separate" than those indicated by the predicates, for all phenomena are only temporary and shifting characterizations of space on the inherence in which depends whatever existence they have (*Timaeus* 52 A and C). This follows inevitably once the flux of phenomenal existence is consistently thought out and seriously accepted; but this phenomenal flux itself is possible, Plato argued, only if there exist entities not involved in the flux, separate from the limitations of space and process (see pages 214-220 *supra*),[217] and only these can be substance, if the distinguishing characteristic of substantial being is independence of conditions external to itself. The separation of the ideas, then, far from supporting Aristotle's argument to restrict ideas to those of sensible substance, implies that the very distinction upon which this restriction depends is non-existent.

Quite apart from the structure of the sensible world, however, is it not legitimate for Aristotle to maintain that, if a term predicated of a subject does signify anything in the ideal world, it can signify only an attribute of a substantial idea and therefore, not being a subject, cannot itself be an independently

[216] *Timaeus* 49 D-50 A, 51 B; cf Cornford, *Plato's Cosmology*, pp 180-181, Robin, *La Physique dans la Philosophie de Platon*, pp 19-20 and p. 28. In the *Seventh Platonic Epistle* the contrast of τὸ τί (= τὸ ὂν ἑκάστου) with τὸ ποιόν τι is a reference to this denial of sensible substance (342 E ταῦτα οὐχ ἧττον ἐπιχειρεῖ τὸ ποιόν τι περὶ ἕκαστον δηλοῦν ἢ τὸ ὂν ἑκάστου . . . 343 B-C. δυοῖν ὄντοιν, τοῦ τε ὄντος καὶ τοῦ ποιοῦ τινος, οὐ τὸ ποιόν τι, τὸ δὲ τί, ζητούσης εἰδέναι τῆς ψυχῆς . cf. *Timaeus* 49 D 7 ff ὅσα δεικνύντες . . δηλοῦν ἡγούμεθά τι, none of which is τι but ὁποιονοῦν τι [50 A 2] and so should strictly be called not τοῦτο or τόδε but τοιοῦτον [cf W Andreae, *Philologus*, LXXVIII, 1923, pp. 65-68]) Compare *Cratylus* 432 B 1-2 where ποιόν τι is equivalent to εἰκών, and see next note.

[217] If *everything* is in flux it is impossible to designate anything ἐκεῖνο or even τοιοῦτον (*Cratylus* 439 D 9, cf. *Theaetetus* 152 D ὡς ἄρα ἓν μὲν αὐτὸ καθ' αὑτὸ οὐδέν ἐστιν οὐδ' ἄν τι προσείποις ὀρθῶς οὐδ' ὁποιονοῦν τι . . . , ὡς μηδενὸς ὄντος ἑνὸς μήτε τινὸς μήτε ὁποιουοῦν . . ἔστι μὲν γὰρ οὐδέποτε οὐδέν, ἀεὶ δὲ γίγνεται.

existing idea? Such an objection rests upon the assumption that the subject-predicate relation of the verbal statement correctly represents the structure of the world of ideas, so that the idea as substance is that which is not predicated of a subject. So Aristotle, in arguing that the existence of ideas is incompatible with the unity of the definition, analyzes the idea of man into the ideas of ζῷον and δίπουν and supposes that the relationship between these two ideas was meant to be a "participation" of the former in the latter which he takes to be equivalent to the existence of the latter as an attribute predicated of the former. That this analysis cannot correctly represent the Platonic conception of the relationship among the ideas has already been observed (pages 39-42 *supra*); and the discussion in the *Sophist* clearly shows that the intercommunion of ideas does not reckon with a distinction between substance and attribute corresponding to the subject and predicate of verbal statements. The ideas of being and difference, for example, "pervade each other"; and, although the words μετέχειν and μεταλαμβάνειν are used, since these ideas "participate" in each other, the relationship, being reciprocal, is neither that of the elements of a proposition nor that which obtains between sensibles and ideas.[218] That not-B is the predicate of A in the "proposition," A is not B, does not for Plato signify that not-B exists as an accident of A (as it does for Aristotle, cf. *Metaphysics* 1017 A 18-19) but rather that A and B are real separate entities which are contrasted and that this relation of contrast is itself the unitary idea of difference, not an attribute of any other idea but an independent entity no less than A and B (*Sophist* 257 B-258 C) Aristotle,

[218] *Sophist* 259 A-B. συμμείγνυταί τε ἀλλήλοις τὰ γένη καὶ τό τε ὂν καὶ θάτερον διὰ πάντων καὶ δι' ἀλλήλων διεληλυθότε τὸ μὲν ἕτερον μετασχὸν τοῦ ὄντος . τὸ δὲ ὂν αὖ θατέρου μετειληφός So being is said to "participate" in both τὸ καθ' αὑτό and τὸ πρὸς ἄλλο into which classes τὰ ὄντα have been divided (255 C), note also ποῖα ἄλληλα οὐ δέχεται (253 B-C), μεταλαμβάνειν ἀλλήλων, ἐπικοινωνεῖν ἀλλήλοις (251 D, 254 B 8, 254 C 5, 257 A 9). Among the words used by Plato in the *Sophist* to designate the intercommunion of the ideas are μείγνυσθαι, συμμείγνυσθαι, and their cognates, κοινωνεῖν, ἐπικοινωνεῖν, and their cognates, μεταλαμβάνειν, μετέχειν, μέθεξις, συμφωνεῖν, συμπλοκή, δέχεσθαι. Against the interpretation of the relation among ideas as that of subject and predicate see further Cornford, *Plato's Theory of Knowledge*, pp. 256-7, 264-6, 268-9.

assuming that the grammatical distinction of subject-predicate is a disjunction with ontological significance, argues that since no idea can exist merely as an attribute predicated of another idea, ideas can be only subjects of which attributes are predicated For Plato, however, no idea is to any other either *τὸ ὑποκείμενον* or *τὸ καθ' ὑποκειμένου*, and consequently the structure of propositions cannot be assumed as a criterion for classifying or restricting the content of the world of ideas

3 The Idea as Substance.

Whether the theory of ideas be accepted or not, substances, Aristotle says, must be supposed to have separate existence in the manner of particular entities or else there will be no substance at all in the sense in which he understands the term (*Metaphysics* 1086 B 14-19), for that reason he applauds the Platonists for recognizing that, if the ideas are substances, they must have separate existence (1040 B 27-29) The ideas, however, are nothing but universals,[219] and it is impossible for any universal to be a substance. In the first place, the substance of each thing is peculiar to that thing whereas the universal is common, for that is called universal which naturally belongs to a multiplicity. If the universal were substance, it would be the substance of all its particulars; and this is impossible, for those things that have a single substance and essence are themselves one.[220] Secondly,

Metaphysics 1038 B 8-1039 A 14

[219] *Metaphysics* 1078 B 31-32 (*οἱ δ' ἐχώρισαν* [*scil. τὰ καθόλου καὶ τοὺς ὁρισμούς*] *καὶ τὰ τοιαῦτα τῶν ὄντων ἰδέας προσηγόρευσαν*); 1086 A 32-33 and 35-36 (*καθόλου τε ὡς οὐσίας ποιοῦσι τὰς ἰδέας . . . τοῖς λέγουσι τὰς ἰδέας καθόλου* [see note 111 *supra*]), 1086 B 9-10 (*ταύτας δὲ τὰς καθόλου λεγομένας ἐξέθεσαν*); 1042 A 15-16 (*τῷ δὲ καθόλου καὶ τῷ γένει καὶ αἱ ἰδέαι συνάπτουσιν κατὰ τὸν αὐτὸν γὰρ λόγον οὐσίαι δοκοῦσιν εἶναι*); 1069 A 26-30 (*οἱ μὲν οὖν νῦν* [i.e Platonists in general, cf. 1069 A 33-36] *τὰ καθόλου οὐσίας μᾶλλον τιθέασιν—τὰ γὰρ γένη καθόλου, ἃ φασιν ἀρχὰς καὶ οὐσίας εἶναι μᾶλλον διὰ τὸ λογικῶς ζητεῖν—οἱ δὲ πάλαι τὰ καθ' ἕκαστα, οἷον πῦρ καὶ γῆν, ἀλλ' οὐ τὸ κοινόν, σῶμα*). It is then the Platonists to whom reference is made in *Metaphysics* 1038 B 6-8 (*ἐπεὶ δὲ περὶ τῆς οὐσίας ἡ σκέψις ἐστί . .* [B 1] *. . δοκεῖ δὲ καὶ τὸ καθόλου αἴτιόν τισιν εἶναι μάλιστα καὶ εἶναι ἀρχὴ τὸ καθόλου διὸ ἐπέλθωμεν καὶ περὶ τούτου*).

[220] In 1038 B 10 read *πρῶτον* (not *πρώτη*), cf Ross, *ap crit.* On the "peculiarity" of substance cf. 1040 B 23-24 (*οὐδενὶ γὰρ ὑπάρχει ἡ οὐσία ἀλλ'*

substance means that which is not predicated of a subject, whereas the universal is always predicated of some subject [221]

Aristotle considers this to be sufficient proof that no universal can be substance in the way that the essence is, by which he means that no universal can be essence, he then proceeds to prove that the universal cannot be an element present in the essence. In the first place, to suppose that "animal" is thus present in man and horse must lead to the same result again, for it is then clear that "animal" is a kind of formula of that in which it is present. Even if it is not the formula of *everything* in the substance, it would none the less be the substance of something, just as "man" is the substance of the man in which it is present; consequently "animal" would be the substance of that in which it is a peculiar element.[222] Furthermore,

ἡ αὐτῇ τε καὶ τῷ ἔχοντι αὐτήν, οὗ ἐστὶν οὐσία), on the implication of the term καθόλου cf 999 B 34-1000 A 1 (οὕτω γὰρ λέγομεν τὸ καθ' ἕκαστον, τὸ ἀριθμῷ ἕν, καθόλου δὲ τὸ ἐπὶ τούτων), *De Part Animal* 644 A 27-28

I take ἑνὸς δ' εἰ ἔσται, καὶ τἄλλα τοῦτ' ἔσται (1038 B 13-14) to be a parenthetical argument in support of the statement that the universal must be substance either of all or of none of the particulars, then ὧν γὰρ μία ἡ οὐσία . αὐτὰ ἓν (1038 B 14-15) gives the reason for πάντων δ' οὐχ οἷόν τε (cf 999 B 20-22 πότερον ἡ οὐσία μία πάντων ἔσται, οἷον τῶν ἀνθρώπων, ἀλλ' ἄτοπον ἓν γὰρ πάντα ὧν ἡ οὐσία μία [1016 B 8 9 τὰ δὲ πρώτως λεγόμενα ἓν ὧν ἡ οὐσία μία]; cf 1036 B 17-20· if one assumes a single "form" for obviously different things, it is possible to set up a single idea for all things, but then all things would be one, contrast 992 B 9-11) The ordinary interpretation (Ross, *Metaphysics*, II, p 210, [Alexander], *Metaph*, p 524, 3-12) leaves both the disjunction and πάντων δ' οὐχ οἷόν τε without a supporting demonstration expressed St Thomas gives an entirely different disjunction "aut enim oportet quod sit substantia omnium, quibus inest, *aut unius*" (*In Metaphysicam Comment.*, § 1572 [ed. Cathala, 1926])

[221] Cf *Metaphysics* 1029 A 7-9 (νῦν μὲν οὖν τύπῳ εἴρηται τί ποτ' ἐστὶν ἡ οὐσία ὅτι τὸ μὴ καθ' ὑποκειμένου ἀλλὰ καθ' οὗ τὰ ἄλλα), 1017 B 13-14, 23-24; *Categories* 2 A 11-B 6

[222] In 1038 B 18-20 the usual reading is οὐκοῦν δῆλον ὅτι ἔστι τις αὐτοῦ λόγος. διαφέρει δ' οὐθὲν οὐδ' εἰ μὴ πάντων λόγος ἔστι τῶν ἐν τῇ οὐσίᾳ. This is ordinarily taken to mean that the universal element, itself being definable, would contain other universal elements present in it substantially (cf Ross, *Metaphysics*, II, p 210, Robin, *Idées et Nombres*, p 48) Later, however, Ross read ἐστί for ἔστι in both lines 19 and 20 (*Oxford Translation*[9], 1928); and it should be noted that in line 20 ἐστί is the reading of Bonitz and Bekker, both of whom give ἔσται as a variant reading of the ἔστι which they print in line 19. Ross'

if substance has any constituents, it is impossible that these be not substances but quality, for that would make quality prior to substance whereas properties are not prior to substance either logically or in the temporal order of generation, since, if they were, they would also be separable (cf. *Physics* 185 A 31-32; see note 54 *supra*) Finally, in the individual Socrates, himself a substance, there would be present a substance which would consequently be the substance of two things The conclusion is that, if infimae species such as "man" are substance, none of the elements in the formula of anything is substance and none can exist apart from the species or in anything else.[223]

That no universal is substance is made clear, then, by these considerations and also because, if one is to avoid the difficulty of the "third man" (see pages 285-300, 307-312 *supra*), no common predicate can be taken to indicate a determinate thing (τόδε τι) but only a qualification (τοιόνδε).[224] To this proof that

new reading makes a unified argument of 1038 B 18-23, and I have consequently adopted it

[223] I take ὁ ἄνθρωπος καὶ ὅσα οὕτω λέγεται (1038 B 30 31) to mean infimae species, not, as does Pseudo-Alexander (*Metaph*, p 525, 17-19), individuals (cf Bonitz, *Metaphysica*, p 348), 1038 B 30-34 is not the conclusion of all that goes before in this chapter but only of 1038 B 17 30, and this passage *assumes* for the sake of argument or example that the substance of the individual man is "man" (1038 B 18, 21), i e that "man" is τὸ τί ἦν εἶναι of the individual From this must be strictly separated 1038 B 34 1039 A 3 which refers to the more general form of the question in 1038 B 8-16 can *any* universal be substance? From the unrestricted answer in 1038 B 35-1039 A 2 (οὐδὲν τῶν καθόλου ὑπαρχόντων οὐσία ἐστι κτλ.) and the additional reference to the "third man" (1039 A 2 3, see note 224 *infra*) it is clear that even in 1038 B 8-16 Aristotle does not mean to state as his *own* doctrine that the specific form "man" is substance or essence (see Appendix V)

[224] Cf *Soph Elench.* 178 B 37-39 τὸ γὰρ ἄνθρωπος καὶ ἅπαν τὸ κοινὸν οὐ τόδε τι ἀλλὰ τοιόνδε τι ἢ πρός τι ἢ πῶς ἢ τῶν τοιούτων τι σημαίνει and 179 A 8-10: φανερὸν οὖν ὅτι οὐ δοτέον τόδε τι εἶναι τὸ κοινῇ κατηγορούμενον ἐπὶ πᾶσιν κτλ. (see pages 288-292 *supra*) In *Metaphysics* 1003 A 5 13 Aristotle states the thesis of the problem whether the ἀρχαί are καθόλου ἢ ὡς λέγομεν τὰ καθ' ἕκαστα (cf 996 A 9-10)· If they are universal, they would not be substances, for no common predicate indicates a τόδε τι but only a τοιόνδε whereas substance is a τόδε τι (cf 1039 A 1-2); but, if it were possible to posit the common predicate as a determinate thing and so single (εἰ δ' ἔσται τόδε τι καὶ ἓν θέσθαι [1003 A 10, cf Ross, *Metaphysics*, I, p 250]), Socrates would be many animals, himself, 'man," and "animal" (cf. 1038 B 29-30 and [Alexander], *Metaph.*, p 524, 23-32).

no universal can be substance either as essence or as a constituent element in the essence Aristotle now adds the argument that substance cannot consist of substances actually present in it. What is *potentially* two may be *actually* one but never what is *actually* two So the line has two halves in it only potentially, for the actualization divides the line into two lines; and consequently, if the substance is a unit (cf. 1037 B 27), it cannot consist of actual substances Democritus, for whom the indivisible magnitudes were substances, was therefore right in saying that two cannot come to be from one or one from two (*De Caelo* 303 A 5-7, *De Generatione* 325 A 34-36, *frag.* 208 [p. 166, 15-17, Rose]); and, if number is a combination of units,[225] the same will hold for it either the number two will not be one or it will not contain an actually existing unit

So such things as the parts of living organisms and the natural bodies like earth, water, fire, and air, which might seem to be substances (cf. 1028 B 9-13), are really only potencies, for none of them is an actual unit (1040 B 5-16, see pages 254-255 *supra*) Thus only an actually existing unit can be substantial.

Metaphysics 1040 B 16-30

Yet Unity corresponds in meaning to Being (cf. 1053 B 25 and note 226 *infra*); and, since the substance of one thing is one and those things of which the substance is numerically one are numerically one, neither Unity nor Being can be the substance of things (clearly because the substance of all would be Unity and so all would be a single unit) Just as the concepts "principle," "element," "cause" are not substances but must always be specified (cf. *Metaphysics* 1052 B 7-14), so Being and Unity, though nearer to substantiality than these, are not themselves substantial, since *nothing* common is substance. For one thing, substance can belong only to itself and that which has it, and, for another, what is *one* could not be in many places at once as is that which is *common*. Obviously, then, *no* universal can exist separately and apart from its particulars; those who assert the existence of

[225] εἴπερ ἐστὶν ὁ ἀριθμὸς σύνθεσις μονάδων, ὥσπερ λέγεται ὑπό τινων. Iamblichus, *In Nicomachi Arith Introd.*, p 10, 8-10 [Pistelli] ascribes to Thales the definition of number as μονάδων σύστημα (cf D'Ooge, Robbins, Karpinski, *Nicomachus of Gerasa*, p. 114); at *Metaphysics* 1053 A 30 Aristotle himself calls number πλῆθος μονάδων.

the ideas are consequently right in "separating" them if they are substances but wrong in making the "one over many" (i. e the universal) a form.

This discussion of the nature of universals in *Metaphysics* Z is used in I, chap 2 where Aristotle takes up the problem which he had stated at 1001 A 4-19 Is τὸ ἕν itself a substance, as the Pythagoreans and later Plato say, or is it the attribute of some underlying nature and so rather to be described more intelligibly as the physical philosophers describe it (cf. *Crit. Pres. Phil.*, p. 43, n. 163)? Since, as has been shown (cf 1038 B 8-1039 A 14 *supra*) no universal can be substance, clearly Being itself can be only a predicate and not a single substantial entity apart from the multiple existents (for it is a common term) and the same is true of Unity, for Being and Unity are the widest of all predicates. Consequently, neither are genera determinate things and substances separate from other things nor can Unity be a genus or the substance of other things, and that for the same reason that Being cannot (cf. Schwegler, *Die Metaphysik des Aristoteles*, IV, p 192, St Thomas Aquinas, *In Metaph. Comment.*, § 1966).

Metaphysics 1053 B 9-1054 A 19

Furthermore, the answer to the question must be alike in all cases, and the senses of Unity have a one to one correspondence with those of Being [226] In the case of qualities, however, the

[226] Cf. 1040 B 16 (ἐπεὶ δὲ τὸ ἓν λέγεται ὥσπερ καὶ τὸ ὄν,) and 1061 A 15-18 what exists can be referred indifferently to Being or to Unity, for, even if they are not the same, they are convertible τό τε γὰρ ἓν καὶ ὄν πως, τό τε ὂν ἕν. At the end of the present chapter (1054 A 13-19) Aristotle gives three arguments to support his statement that ταὐτὸ σημαίνει πως τὸ ἓν καὶ τὸ ὄν· 1) like Being, Unity is connected equally with all the categories and is not restricted to any one of them, 2) the statement "one man" predicates nothing over and beyond what is predicated by "man," even as "Being" is nothing apart from one of the categories; 3) being one is being some particular thing

At 1003 B 22-34 the thesis, ὅσα περ τοῦ ἑνὸς εἶδη τοσαῦτα καὶ τοῦ ὄντος is established as follows· Being and Unity are the same thing in that they imply each other, just as do "principle" and "cause" (cf. 1013 A 16-17, Bonitz, *Metaphysica*, p 219), even though they are not denoted by a single definition "One man" is the same as "man" and so is "existent man", and the verbal duplication, "one existent man," denotes nothing different (Being and man are not separated in genesis or destruction, and the same is true of Unity), so that the addition in all these cases does not alter the meaning and Unity is nothing

unit is some definite nature and such is also the case with regard to quantities. Clearly, then, one has in every case to inquire *what* the unit is and not suppose it sufficient to say that its nature is just Unity any more than that the nature of what is is just Being. Now, for colors the unit is a color (namely white, the other colors being produced from this and its privation, black [cf *De Sensu* 442 A 12-27, 439 B 16-18]), for musical sounds it is the semi-tone (cf Robin, *Idées et Nombres*, note 327[3]), for articulate sounds the vowel, and for rectilinear figures the triangle. If all existing things were any of these classes, for example colors, they would be a certain *number* but a number *of* determinate things, in this case colors, and the unit

apart from Being Furthermore, the substance of each thing is essentially one and essentially an existent (The text of 1003 B 26-30 I read as follows *ταὐτὸ γὰρ εἷς ἄνθρωπος καὶ ἄνθρωπος καὶ ὢν ἄνθρωπος καὶ ἄνθρωπος* [cf Alexander, *Metaph*, p 247, 33-35] *καὶ οὐχ ἕτερόν τι δηλοῖ κατὰ τὴν λέξιν ἐπαναδιπλούμενον τὸ εἷς ὢν ἄνθρωπος* [cf Syrianus, *Metaph*, p 61, 7-8 and Alexander, *Metaph.*, p 247, 40 <A[2], cf Asclepius, *Metaph*, p 236, 23>]—*δῆλον δ' ὅτι οὐ χωρίζεται οὔτ' ἐπὶ γενέσεως οὔτ' ἐπὶ φθορᾶς, ὁμοίως δὲ καὶ ἐπὶ τοῦ ἑνός—ὥστε* .. For different texts cf Ross, *Metaphysics*, I, pp 257-258 and Robin, *Idées et Nombres*, note 168, II [pp 146-147]) Unity, like Being, then, varies in each of the categories, is not restricted to any one of them, and is not, in spite of his use here of the term *εἴδη τοῦ ἑνὸς* . *καὶ τοῦ ὄντος* (1003 B 21, 33-34, cf Alexander, *Metaph*, p 249, 28-33 and note *γένη*, not *εἴδη*, in 1004 A 5), a genus of which they are species (cf *Metaphysics* 1018 A 35-38, 1030 B 10 12, 1045 B 5-7).

This correspondence with Being in all the categories shows that there can be no idea answering to the term in question Such is the argument against the idea of good in *Eth Nic* 1096 A 23-29 since *τἀγαθὸν ἰσαχῶς λέγεται τῷ ὄντι*, being predicated in the categories of substance, quality, quantity, relation, time, and place, it is clearly not a single thing, for then it would have been predicated in only one of the categories (cf *Eth Eud* 1217 B 25-34 [*Magna Moralia* 1183 A 9-11, 1205 A 8-14] and *Topics* 107 A 3-12 where *ἀγαθόν* is proved to be an homonymous term [cf Suidas, *s v ἀγαθόν*, quoted by Fritzsche on *Eth Eud* 1217 B 29])

The correspondence of *τὸ ὄν* and *τὸ ἕν* is stated in Plato's *Parmenides* 141 E 9-12 (*if the one is not, it is not one, εἰ γὰρ ἦν ἤδη ὂν καὶ οὐσίας μετέχον*), 144 C-E (*πρὸς ἅπαντι ἄρα τῷ τῆς οὐσίας μέρει πρόσεστιν τὸ ἕν* and again *οὔτε γὰρ τὸ ὂν τοῦ ἑνὸς ἀπολείπεται οὔτε τὸ ἓν τοῦ ὄντος, ἀλλ' ἐξισοῦσθον δύο ὄντε ἀεὶ παρὰ πάντα*). With Aristotle's *οὐ χωρίζεται οὔτ' ἐπὶ γενέσεως οὔτ' ἐπὶ φθορᾶς* cf. *Parmenides* 153 D-E (*οὐκοῦν τὸ ἓν ἅμα τε τῷ πρώτῳ γιγνομένῳ γίγνοιτ' ἂν καὶ ἅμα τῷ δευτέρῳ καὶ οὐδενὸς ἀπολείπεται τῶν ἄλλων γιγνομένων* κτλ.). Yet *ἔστι* and *ἓν* signify *two* different things, and *ἓν ἔστι* means that the one *μετέχει οὐσίας* (*Parmenides* 142 C 4-7, 142 D-E, cf *Sophist* 244 B-D).

would be a determinate one, in this case white. The same reasoning holds for all classes; and so if there are numbers and a unit in qualities, quantities, and movement but the number is a number *of* something and the unit is a determinate unit of which the substance is not just Unity, this must be true also in the case of substances. For substances, then, the unit must be one substance as it is one color in the case of colors[227] This amounts to an inductive demonstration that Unity is always a predicate of a determinate subject (1054 A 9-11, cf. [Alexander], *Metaph*, pp. 613, 41-614, 6) and so falls under the general rule that no universal can be substance

Metaphysics 1001 A 4-24

In the preliminary statement of the problem concerning the nature of Unity and Being Aristotle approaches the question from the opposite point of view After saying that Plato and the Pythagoreans answered this most difficult and important problem by asserting that Being and Unity are not attributes of some other thing which underlies them but that their substance is just essential Being and essential Unity whereas the physical philosophers specify them as those things which they make their principles (1001 A

[227] In his chapter in Book Δ on the meaning of ἓν Aristotle says (1016 B 17-23) that the essence of unity is to be a principle (i e. "beginning," ἀρχή) of number, for the primary measure is the principle, since that by which primarily we come to know each class is its primary measure So the principle of what is intelligible in each is τὸ ἓν This, however, is not the same in all classes, being in one the semi-tone, in another the vowel (or consonant), still another for weight, and another for motion In his attack in Book N on theories that make τὸ ἓν one of a pair of contrary principles he again (1087 B 33-1088 A 14) develops the doctrine that the unit is a measure and that in every case there exists a different subject of which this unity is the attribute Here his examples are the semi-tone again, the inch or foot, the rhythmical step or syllable, and a determinate weight. In quantities the unit is always a quantity, he says, in qualities a quality (being divisible in the latter case specifically, in the former sensibly), which indicates that unity is not in itself a substance The "unit" means that it is a measure of a certain multiplicity, "number" that it is a measured multiplicity, i e. a multiplicity of measures The measure must be identical with the things measured of horses the measure is horse, of men man; of man, horse, and god it is probably "living being" and their number would be "living beings"; since man, white, and walking belong to one identical subject, their number would be only a number of classes or some such notion (Cf also *Metaphysics* 1052 B 18-1053 A 30.)

4-19; cf 996 A 4-9),[228] he argues in the thesis that, if Unity and Being are not posited as substantial, none of the other universals can be substance, since if these which are most universal do not have self-subsistence there could hardly be any other universal apart from the particulars. In the antithesis, naturally, there is no suggestion that it is just the universality of Being and Unity which precludes their substantiality. Hence one might expect Aristotle to prove first that Unity and Being are not substances and then from this conclusion to draw the consequence that no universal can be substantial. That course of argument, however, represents an entirely different line of attack upon the theory of ideas; in the passages which we have considered the substantiality of Being and Unity is denied on the ground that *no* universal is substantial That in the course of disproving generally the substantiality of the universal Aristotle should be concerned to make a special refutation of the substantiality of Unity is due to the fact that he himself in insisting upon unity as a necessary mark of all substance (1039

[228] For Aristotle's connection of the Pythagoreans with Plato here and for the reference to the "physical philosophers" cf *Crit Pres Phil*, pp 36 and 43 44 As *Metaphysics* 1000 A 9 11 is a paraphrase of Plato's *Sophist* 243 A 6-B 1, so do the remarks on the physical philosophers at 1001 A 12-19 derive from the *Sophist* with 1001 A 14 15 (δόξειε [*scil* Ἐμπεδοκλῆς] γὰρ ἂν λέγειν τοῦτο [1 e τὸ ἕν] τὴν φιλίαν εἶναι αἰτία γοῦν ἐστὶν αὕτη τοῦ ἓν εἶναι πᾶσιν) cf. *Sophist* 242 E (αἱ μαλακώτεραι [1 e Empedocles] τότε μὲν ἓν εἶναί φασι τὸ πᾶν καὶ φίλον ὑπ' Ἀφροδίτης) and with 1001 A 18-19 (ἀνάγκη γὰρ καὶ τούτοις τοσαῦτα λέγειν τὸ ἓν καὶ τὸ ὂν ὅσας περ ἀρχὰς εἶναί φασιν) cf. *Sophist* 242 C 9-D 4 and 243 D E

In 1001 A 10 12 I have followed Ross in accepting the text of Christ which is based upon the emendation of Bonitz Plato and the Pythagoreans think οὐχ ἕτερόν τι τὸ ὂν οὐδὲ τὸ ἓν ἀλλὰ τοῦτο αὐτῶν τὴν φύσιν εἶναι, ὡς οὔσης τῆς οὐσίας αὐτοῦ τοῦ ἑνὶ εἶναι καὶ ὄντι The meaning of the sentence is clear since it obviously repeats 1001 A 6 7 καὶ ἑκάτερον αὐτῶν (*scil* τὸ ὂν καὶ τὸ ἕν) οὐχ ἕτερόν τι ὂν τὸ μὲν ἓν τὸ δὲ ὂν ἐστιν The genitive absolute as given by the MSS cannot be construed (αὐτοῦ τὸ ἓν . ὄν τι, A[b], . ταὐτὸ ἓν ὄν-τι, E and J, αὐτὸ τὸ ἓν . ὄν τι, F[b] and Alexander) and Bonitz's αὐτοῦ τοῦ ἑνὶ is certainly right It seems unnecessary to add τοῦ before ὄντι, as Bonitz would do, but that, in spite of Alexander (*Metaph*, p 224, 3 5, cf Asclepius, *Metaph*, p 203, 25-26), there is in this phrase no intention to identify τὸ ὄν and τὸ ἕν is clear from 1001 A 6-7 (cf also Alexander, *ibid*, 5 6 ἰδέαι . . αὐτοὸν καὶ αὐτοέν and 17 εἰ μὴ λέγοι τὸ ἓν καὶ τὸ ὂν οὐσίας εἶναι and Asclepius, *Metaph*, p 204, 3-9).

A 7 [cf. 1037 B 27], 1040 B 5-16, 1003 B 32-33) might seem to encourage the notion that this, as the essential characteristic of substance, must itself be substantial To this he replies that Unity itself, being a common predicate, cannot be a unit (1040 B 25-26).

The universal, then, because it is a common predicate, lacks the unity essential to substance [229] As a *predicate* it cannot be substance, for substance is always subject and never predicate; as *common* it is not peculiar to anything and so cannot be the substance *of* anything. *It is, however, as the substance of phenomena* that the universals are set up as ideas, but, although as substances they are quite rightly separated, this very separation not only deprives them of their universality but also makes it impossible for them to be the substance of anything else [230]

In the first place, there are, according to Aristotle, certain things to which materialized existence is essential; they are "this form in this matter" or "these things in such and such a condition." It is consequently useless to try by abstracting matter to reduce everything to ideas. A living being, for example, is a sensible thing and cannot be defined without matter and so not without parts of a definite kind either It is false to apply to animal what is true of the circle and to suppose that as the latter can exist without the bronze in which it is materialized so man can

Metaphysics 1036 B 22-30

[229] Cf *Categories* 3 B 13-18 that the so called "secondary substances," like "man" and "animal," do not indicate τόδε τι but rather ποιόν τι is proved by the fact that the subject is not a unit as is the primary substance but "man" and "animal" are predicated of many subjects

[230] *Metaphysics* 992 A 26-27 τὴν δ' οὐσίαν οὐόμενοι λέγειν αὐτῶν (i e τῶν φανερῶν) ἰτέρας μὲν οὐσίας εἶναί φαμεν . . and cf *Metaphysics* 988 A 34-B 6 for Aristotle's identification of the idea with τὸ τί ἦν εἶναι. In *Metaphysics* 991 A 12-14 (= 1079 B 15-18) Aristotle contends that the existence of ideas contributes nothing to the knowledge of sensible things or to their existence, for the ideas are not the substance of the sensible objects since they are not immanent in them In 991 B 1-3 (= 1079 B 35-1080 A 2) the objection is reversed since substance and that of which it is the substance cannot be separate, how could the ideas which are substances of things exist apart? (See on the connection of these passages page 223 and note 132 *supra*)

For the argument that the separation of the idea prevents it from fulfilling the function of a common predicate see note 121 *supra*.

exist without material parts [231] The same distinction between "mathematicals" and "natural concretions" and the impossibility of defining the latter without reference to their special matter was in the *Physics* (193 B 35-194 A 7) put forward as an objection to the separation of ideas, [232] and here in the *Metaphysics* too the contention that the definition of man must include reference to his material parts follows a statement of the Pythagorean and Platonic treatment [233] and might seem to have

[231] For ἄνευ κινήσεως (1036 B 29) = ἄνευ ὕλης φυσικῆς cf *Physics* 194 A 5 (pages 203-204 *supra*) The "comparison in the case of animal" Aristotle here ascribes to "the younger Socrates" (cf *Politicus* 257 C-258 A, *Theaetetus* 147 D, *Sophist* 218 B, and Novotný, *Platonis Epistulae*, pp 275 276), in *Epistle* VII, 342-343 the circle is the example used to illustrate what is true of ξῷον as well as of all other things E Kapp (*Philologus*, LXXIX, pp 228-233) argues that the intention of the younger Socrates was not to establish an idea of man but to justify the reduction of mathematical definitions to purely numerical terms A comparison of 1036 A 34-B 7 with *De Caelo* 278 A 4-10 makes this appear improbable (see note 233 *infra*)

[232] See pages 203-204 *supra* and compare the topical arguments that "complex of body and soul" must be a proprium of τὸ αὐτοξῷον ἢ ξῷον, that immobility is a proprium of αὐτοάνθρωπος *qua* idea but not *qua* man, that the determination "mortal" in the definition of animals prevents the definition from applying to any idea, and the general argument that no definition which includes the characteristic of activity or passivity can apply to the idea of the thing defined (*Topics* 148 A 14-21, 137 B 3-13 [pages 1 5 *supra*]) See also *De Caelo* 278 A 28 B 8 where in proving that the world is unique Aristotle includes the οὐρανός and man along with γυμνότης in the class of things ὅσων ἐστὶν ἡ οὐσία ἐν ὑποκειμένῃ τινὶ ὕλῃ

[233] At the beginning of Z, chap. 11 Aristotle remarks (1036 A 26-31) that it is reasonable to wonder what sort of parts are parts of the form and what are parts of the concretion, a distinction which must however be made before anything can be defined (that only the parts of the form are parts of the definition had already been stated in chap 10 [1035 B 34]) In the case of things which like the circle appear in specifically different materials, he continues, these latter are obviously no part of the substance; but when a thing is never seen apart from a specific material, as the form of man always appears in flesh and bone, it is not so clear whether this is part of the form or is matter which we fail to distinguish from form because they always appear together just as it would be difficult, if we saw only brazen circles, to distinguish the brass from the form of which it is nevertheless no part (1036 A 31-B 7 [this is the "comparison" of Socrates the younger], cf *De Caelo* 278 A 4-10 [in the statement of the problem referred to in note 232 *supra*]) With this difficulty of distinguishing between matter and form Aristotle then identifies (1036 B 7-13) the origin of the theory of certain people who reduce all things to numbers and make the

been determined by opposition to these doctrines At any rate, in the preceding chapter (1035 A 17-22) Aristotle had said that the bones, sinews, and flesh into which a man dissolves are not parts of the formal substance which is the object of definition and so are not present in the formula; and, although immediately thereafter (1035 A 22-23) he seems to admit a certain formula of the concretion in which the formula of such parts would be present (see also the three kinds of definition in 1043 A 14-22 and cf 1025 B 30-1026 A 6 and *De Anima* 403 A 29-B 9), his final statement is that the material parts of a concretion are not parts of the substance and that there is definition of the concretion *not* as involving matter[284] but only in respect of its primary substance, e g the formula of the soul in the case of man (1037 A 24-29). Of living organisms, then, which alone according to Aristotle are in the strict sense substances (see pages 254-255 *supra*), the primary substance, i e the essential form, is the soul, and such terms as "man" and "horse," which are universal predicates of particulars, are not substance but are concretions of a certain formula or essence and a certain matter taken universally (see Appendix V, pages 506-508).

formula of the line that of two as if line and continuity were to triangle and circle as flesh and bone are to man This is a reconstruction of the motivation of the Pythagorean theory (cf *Crit Pres Phil*, pp 42 and 225, Kapp's identification [*Philologus*, LXXIX, p 232] of τινες in 1036 B 8 with Socrates the younger is unconvincing in view of the tradition [cf Ross, *Metaphysics*, II, p 202], the construction of the passage [which on Kapp's view would require us to suppose without any evidence that this Socrates rejected ideas in any and every sense], and the mention of Pythagoreans in 1036 B 18-19 which, when compared with 987 A 25-27, is seen *not* to be introduced here merely "beilaufig zur Diskreditierung der Ideenlehre", even if Kapp's interpretation of the intention of Socrates' comparison be correct, this Socrates would more probably be included in the οἱ μέν of 1036 B 14 than in the τινες of 1036 B 8); and then with these Pythagoreans Aristotle connects, among those who posit ideas, the sect which identifies the dyad and the absolute line (αὐτογραμμή), for he contends that the result both for them and for the Pythagoreans is a single form for many things that are clearly different in form (1036 B 13-19; cf 987 A 25-27).

[284] That ὕλη here does not mean merely "prime matter," as Ross says (*Metaphysics*, II, p 205) in an attempt to reconcile this passage with 1036 B 29, is proved not only by 1036 A 2-12 (where the matter which renders the sensible concretion indefinable is bronze or wood) but also by the fact that in this passage itself the matter in the concretion "man" is everything but the soul (cf. [Alexander], *Metaph*, pp 516, 37 517, 14), the matter in the concretion "snubness" is "nose" (1037 A 29-31).

By thus differentiating the "materiate universal" from the essential form of true substances Aristotle might seem to have accounted for the presence of matter in the notion of concretions and at the same time to have maintained the sharp distinction between the parts of the concretion and the parts of the form. Yet, apart from the epistemological difficulty introduced by this differentiation, if the so-called pure form be identified with the soul and the soul is the essence of a certain kind of body (1035 B 14-16; *De Anima* 412 A 19-B 6, 412 B 9-413 A 3), this form itself cannot be defined without reference to the matter of which it is the actuality and with which it consequently forms a unit (*De Anima* 412 B 6-9, 414 A 14-28; *Metaphysics* 1045 B 17-22), so that the definability of primary substance in isolation from matter has not been vindicated by identifying the idea with the materiate universal and replacing it with the soul as the form of concrete substances. If, on the other hand, the soul as essential form *is* definable without reference to the material parts of the concretion, Aristotle's own doctrine refutes his objection that the ideas cannot be substances of concretions because all such substances involve matter in their definitions. Moreover, if the primary substance is the soul and if this is not to be defined as the actuality of particular material parts, the soul is separable and materialization is not essential to the primary substance of a concretion.[285] The distinction from pure form of the universal and the intelligible particular as concretions in addition to the concretion which is the sensible particular merely postpones the dilemma; and Aristotle might have been expected to see that he could not consistently maintain the definability of concretions with reference to the form alone and at the same time urge against the theory of ideas the necessary implication of matter in such definitions.[286]

[285] That the soul is inseparable from body follows from the fact that it is the actuality of certain material parts; if, however, the soul (or any part of it) is not the actuality of a particular body, there is no reason why it should not be separable (*De Anima* 413 A 4-7)

[286] Shorey has pointed out (*A. J. P.*, XXII [1901], p. 158) that Aristotle's conception of the relationship of matter and form comes ultimately from *Cratylus* 389 B-C. On the consequent difficulties which arise for him in the defining of

Whether or not the essential form of a concretion is definable without reference to matter, Aristotle has already argued that it cannot be a substance apart from the sensible particulars, since if it were there could never be generation of an individual substance.[227] Generation is the production of a certain qualification

Metaphysics 1033 B 19-1034 A 8

concretions cf. Zeller, *Phil Grieck*, II, 2, p 211, n 2 and p 347 and Calogero, *I Fondamenti della Logica Aristotelica*, pp 132-136

As for the distinction drawn in Z, chaps 10 and 11-between primary substance and universal, one example will suffice to indicate the confusion of Aristotle's treatment Since the form of man is distinguished from universal "man," which is the concretion of form and matter taken universally, a similar distinction would be expected between universal "circle" and the form of circle and the definition of circle should refer to the latter, not the former (in 1033 B 25-26 the universals, "man" and "animal," are made to correspond not to the universal, "sphere," but to "bronze sphere" taken generally). Aristotle, however, takes as an example of the object of definition "the universal circle" and treats this as a pure form corresponding to "soul" and consequently not involving matter of any kind (1036 B 32-1037 A 5, 1036 A 1-2) Still, the introduction of this distinction would not suffice to eliminate the inconsistency, for the definition in respect of form is definition by genus and differentia (cf 1043 A 19 20) and, when Aristotle comes to explain the unity of definition by genus and differentia, he gives as an element in the definition of circle the "intelligible matter," *σχῆμα ἐπίπεδον*, i e extension (1045 A 33) even as previously he had given *σχῆμα τοιόνδε* as the determination of the *form* of the sensible circle (1033 A 3-4) The "intelligible matter" banished from the pure form of a concretion thus reappears as the "generic material" of that form, in the *Posterior Analytics* the definable essence determined by genus and specific differentia is itself called a *σύνολον* as being a concretion of these elements (97 A 35-B 6, cf Waitz, *Organon*, II, p 418)

Aristotle is exceedingly reticent about giving examples of his "pure forms" In *Metaphysics* 1037 A 30 *κοιλότης* exemplifies the "indwelling form" which is, like soul, the primary substance of a concretion and in 1025 B 30-34 it is distinguished from *τὸ σιμόν* as being *ἄνευ ὕλης αἰσθητῆς*, but this may imply—especially in view of the mention of mathematics in this passage (1026 A 7-10)—that it does involve "intelligible matter" So, although in 1037 B 1-3 *καμπυλότης* is given as an example of the identity of essence with that of which it is the essence, Aristotle adds at once "*if καμπυλότης* is a primary substance" Ross says that "in the long run God, the intelligences that move the spheres, and the human reason (or rather the 'active' element in it) are the only pure forms that Aristotle recognizes" (*Metaphysics*, I, p cl) Yet, if there is any seriousness in Aristotle's statement that natural concretions are definable only in respect of their primary substance, he must for all of these assume essences which are independent of matter or else admit that what he holds to be most real in this world is indefinable and unintelligible

[227] In Z, chaps 7-8 up to this point (1032 A 12-1033 B 19) Aristotle has

in a definite thing, and the product is this thing qualified in such and such a way, the complex *τόδε τοιόνδε*. The form signifies the qualification (*τοιόνδε*) and is not a "this" which is determinate. The individual man, being the result of such a process, corresponds to the individual bronze sphere, a complex of such and such a form in particular matter; "man" and "animal," then, correspond to bronze sphere in general (Since "sphere" and not "bronze sphere in general" is the form of the particular bronze sphere, this implies that, quite apart from the question of "separation," the ideas of concretions are not forms at all but only general names of particulars.) So the explanation of generation and substances is not helped by assuming that the forms are separate ideas and is no reason for making them independent substances. In the case of natural organisms where, since they are most especially substances, one would have particularly expected to posit the form as a separate model it is clear that this is unnecessary, for there obviously the begetter by being of the same kind, i. e. specifically the same, as the begotten is adequate to produce the latter, i. e. to cause the information of the material; it is a man that begets a man.[288]

argued that in all generation, natural, artistic, or spontaneous, what is produced is a concretion of matter and form and that there is no production of either the matter, which is the necessary substrate of generation, or the form, which is the essence of the product (1032 B 1-2 [*εἶδος δὲ λέγω τὸ τί ἦν εἶναι ἑκάστου καὶ τὴν πρώτην οὐσίαν*], 1032 B 14 [*λέγω δ' οὐσίαν ἄνευ τῆς ὕλης τὸ τί ἦν εἶναι*], 1033 B 5-7 [cf Bonitz, *Metaphysica*, p 326]) He now contends that in spite of this the form has not substantial existence apart from the particular concretions (Cf *Anal Post.* 77 A 5-9 where he argues that, although the universal must exist if there is to be demonstration, this does not mean that there are ideas or *ἕν τι παρὰ τὰ πολλά* [see pages 71-72 *supra*]) Ross subscribes to the view that chaps 7-9 originally formed a separate treatise and do not belong to the original plan of Z (*Metaphysics*, II, pp 181 and 227), the direct references to these chapters at 1039 B 26-27 and 1043 B 16-18 and to their doctrine at 1042 A 29 31 (all recognized by Ross himself) make this view highly improbable

[288] See *Metaphysics* 1070 A 21-30: since efficient causes are causes as preëxisting but the cause as formula is coëxistent with that of which it is the cause, generation does not require the existence of ideas, for the particular man begets the particular man and similarly in artificial production the art (i e in the mind of the artist) is the formula of the product (cf. for this 1032 A 32-B 31, 1034 A 21-32); *Metaphysics* 1071 A 19-23· the causes that can be expressed in universal terms do not exist, for the particular is the principle of particulars: "man"

Here the proof that the essential form *cannot* be a separate entity (as distinguished from the argument that such an entity is obviously superfluous in natural generation) consists simply in an analysis of the product of generation into two elements one of which is the qualification of the other. Generation being the process whereby some definite thing acquires a new form, since the product is that thing modified, the form must be the other element, the modification or qualification of the subject If the form too were a determinate "thing," there could be no combination of matter and form such that one would be the qualification of the other and consequently there would be no

is the originative principle of 'man' but no universal "man" exists, Peleus being the father of Achilles and your father of you (see Appendix V, page 507), see further 1049 B 17 29, *Physics* 198 A 24 27, 202 A 9-12, *De Part Animal* 640 A 24 33

Since it is because the parent has the form which the offspring is to have that he is adequate to inform the matter which thus becomes the new creature, Aristotle explains (1033 B 33-1034 A 2) that even the mule, which does not have the form of its sire the horse, does have the form which is the unnamed proximate genus common to both horse and ass (the genus called Μόφουρον in *Hist Animal* 491 A 1-2 and *De Gen Animal* 755 B 18) So the mule is, as Ross remarks on this passage, 'a sort of abstract universal" The extent to which Aristotle carries this reasoning appears in his explanation of monsters (*De Gen Animal* 769 B 11-13) when the material furnished by the mother is not dominated by the formal cause which the semen carries there remains ultimately only the most general universal, that is "animal" (contrast *De Generatione* 322 A 16-18) The fundamental passage for Aristotle's application of his theory of form and matter to the special problems of natural genesis is *De Gen Animal* 767 A 36 768 B 36 (cf *Crit Pres Phil.*, pp 282 283), and here for the problem of substance the following passages are most instructive The father is a particular, male, human, animal, and both the particular and the class operate in generation but the particular more than the class, just as the offspring becomes a certain kind (ποιόν τι) but also a determinate thing (τόδε τι) and it is this that is substance So the efficient "movements" in the seed derive from all these forces (767 B 24-768 A 1) Of these "movements" some exist *actually* in the seed, namely those of the particular father and of the universals such as "man" and "animal," while others exist *potentially*, those of the female and of the ancestors (768 A 11-14). Finally, these distinctions apply not only to the concrete substance as a whole but to its parts as well (768 B 2 15) with the result that the form operates in generation not as a single entity nor even necessarily as a determinate system of characteristics (cf. *Crit Pres Phil.*, p 280, n 232)

generation.[239] It is the same analysis which had already provided Aristotle with the more general argument to the effect that, if there are ideas such as the Platonists assert, the subject cannot be substance

Metaphysics 1031 B 15-18

The Platonic ideas must be substances and cannot be attributes of a subject, for, if they were, they would exist by participation[240] The implication is clear if the forms are separate substances, there is no substance of which they can be predicated; but in that case there can be no concrete substance at all, for there is nothing of which the form is the form The form, then, for Aristotle is just " what something is "; it exists only as characterizing a subject and otherwise is nothing but a *possibility*, a character which a subject *might* have though it does not So, when later the form is identified with actuality and actuality has been shown to be prior to potency (*Metaphysics* Θ, chap. 8; cf. the problem stated at 996 A 10-11, 1002 B 32-1003 A 5), it is said that, if there are substances such as the ideas posited by the dialecticians (οἱ ἐν τοῖς λόγοις, cf. 987 B 31-32), they would be not " absolute knowledge " or " absolute motion " but rather a *knowing subject* and a *moving thing*, for it is these latter that are actualities, the former being merely potencies of them.[241]

Metaphysics 1050 B 34-1051 A 2

[239] Cf the analysis in *De Anima* 412 A 15-21 Every living body is a substance composite of matter and form and so a body with a certain qualification (σῶμα τοιόνδε) The body, however, is not an attribute but a subject, i e matter Therefore the soul must be the other element in the composition, the qualification, i. e the form

[240] That is, as attributes they would derive their existence from the substantiality of their substrate, cf [Alexander], *Metaph*, p 669, 29-30 (on 1069 A 21-23). λέγεται ὄντα καὶ ὑποστήτος μετέχουσιν ὅτι τῆς οὐσίας εἰσὶ πάθη. The expression ἥσουται κατὰ μέθεξιν was doubtlessly meant to emphasize the inversion of the Platonic doctrine, according to which it is the particulars that exist κατὰ μέθεξιν There is a remarkable likeness between Aristotle's argument here and Plato's statement (*Timaeus* 52 C) that the εἰκών derives whatever existence it has from the medium in which it necessarily appears; Aristotle, however, does not reckon with the εἰκών at all (see also page 118 *supra*) but argues that since the *ideas* cannot be qualifications of a substrate there can be no substantial substrate at all

[241] That potentiality is involved in the being of the ideas, that their essence is not actuality, is intimated in other contexts (*Metaphysics* 1075 B 20-24 [pages 103-104 *supra*], 1071 B 14-20 [pages 219-220 *supra*]), and here too the implica-

In short, if the form separated as an idea is to be an actual substance, as it must be, it cannot be a bare qualification but must be a subject qualified. As such, however, it involves a double difficulty: it cannot, as has been remarked, be the attribute of another substantial subject; and, on the other hand, it is itself analyzable into two elements, subject and the formal attribute of this subject, an analysis which leads to an infinite regress if the formal element is to be set up as an actual substance.

As arguments against the separate ideas these difficulties are developed by Aristotle in his consideration of the relationship between any essence and that of which it is the essence. In the case of self-subsistent entities, that is whatever is said to be what it is in virtue of itself (τὰ καθ' αὑτὰ λεγόμενα), this relation is that of identity,— as appears from the nature of the ideas themselves which are supposed to be such entities, substances that have no other substances or entities prior to them. Here, Aristotle argues, if the entity and its essence should *not* be identical, there would be besides the ideas that are posited other substantial ideas prior to these, if the essence is substance (i. e. if it is to be considered

Metaphysics 1031 A 28-B 18

tion is that what the Platonists call ideas are mere potencies The usual interpretations of the passage, however, misrepresent the course of Aristotle's reasoning He does not start with the premise that the ideas *are* potencies and from this conclude that "there must be something more scientific than science-itself" (so e g. Ross, Tricot, Rolfes) or that "the particulars will be prior to the ideas" (so Schwegler *ad loc* ; Grote, *Aristotle* [1872], II, p 328; [Alexander], *Metaph.*, p 593, 22-31) As in 1040 B 27-1041 A 3 he had argued that if the ideas are substances they are rightly separated but if *separate* substances they cannot be the αὐτοάνθρωπον and αὐτόϊππον that the Platonists make them, so here his point is that the ideas of the Platonists must be *actual* substances but that in that case αὐτοεπιστήμη and αὐτοκίνησις cannot be ideas as the Platonists say they are These examples of Platonic ideas Aristotle probably took, the first from *Parmenides* 134, the second from *Parmenides* 129 D-E or *Sophist* 254 D ff Since in the former passage Parmenides makes αὐτοεπιστήμη the knowledge which God has and in the present chapter of the *Metaphysics* Aristotle has already mentioned the actuality of the prime mover (1050 B 4 6) and the eternal *mobile* in which no potency is involved (1050 B 20-28), it is most likely that the ἐπιστῆμόν τι and the κινούμενον of the present passage hint at God and the astral spheres which for Aristotle take the place of the ideas as the eternal actual substances. The likelihood of this reference is supported by the fact that in 1040 B 27-1041 A 3 a similar reference is certain (see page 220 *supra*).

a substance separate from that of which it is the essence after the fashion of the Platonists themselves when they set up the ideas in the first place [cf. 988 A 34-B 6 and note 230 *supra*]). This would itself be inconsistent with the nature of the ideas as assumed; but, furthermore, if the idea (the self-subsistent entity) and its essence are separated from each other, 1) the ideas could not be known, since knowledge of anything means to know its essence, and 2) the essence would not be existent, since the essence of being (τὸ ὄντι εἶναι), distinguished from being (τὸ ὄν), would not be existent (ὄν) and, if the essence of being does not exist, *no* essence does, for either *all* or *none* must exist. Further, whatever has not the essence of good is not good, so that the idea of good itself would not be good.[242] This, Aristotle believes, demonstrates the identity of self-subsistent, primary entities and their essences, for this identity satisfies the conditions of the problem whether there are forms or not, though, if there are, it is all the more requisite. The demonstration, which hitherto involved only the identity of the ideas and their essences, is thus shown to be itself a refutation

[242] ἔτι ᾧ μὴ ὑπάρχει ἀγαθῷ εἶναι οὐκ ἀγαθόν (1031 B 11) is wrongly taken by Pseudo-Alexander (*Metaph*, p 483, 7-12) to mean that the essence of good is not good Since it is the idea of good (αὐτὸ τὸ ἀγαθόν) from which the essence (τὸ ἀγαθῷ εἶναι) has been separated in the hypothesis (1031 A 31-32), ᾧ μὴ ὑπάρχει ἀγαθῷ εἶναι must mean the idea of good (1031 B 5 εἰ μήτε τῷ ἀγαθῷ αὐτῷ ὑπάρχει τὸ εἶναι ἀγαθῷ), as has been generally recognized The commentator's "mistake," however, is really an attempt to make Aristotle's arguments consistent. In 1031 B 6 the separation of essence and idea was said to mean that "being good" (τὸ εἶναι ἀγαθόν) does not apply to the essence of good, and in 1031 B 7-9 *this*, the fact that the essence of good is not good, was the ground for concluding that the essence of existence is not existent. If now τὸ εἶναι ἀγαθόν is concomitant with the essence of good and so does not apply to the idea separated from the essence, as Aristotle argues in 1031 B 11, τὸ εἶναι ὄν must be concomitant with the essence of existence, τὸ ὄντι εἶναι *does* exist even though severed from the idea, and the whole previous argument collapses. That argument is dubious anyway, for the assumption that τὸ ὄντι εἶναι being different from τὸ ὄν cannot be ὄν is a repetition of the fallacy that τὸ τοῦ ὄντος ἕτερον μὴ ὄν ἐστι (cf [Alexander], *Metaph*, p 482, 39-40 and, for Aristotle's use of this fallacy against Plato, *Metaphysics* 1001 A 29 B 1 [pages 93-94 *supra*]). As for the reverse argument itself (1031 B 11), it is clear that Aristotle could not have stated it generally, for, if only that is good to which the essence of good belongs, only that is existent to which belongs the essence of existence, in which case the essence of good is not existent nor can any essence *be* except τὸ ὄντι εἶναι.

of the separate ideas, for since they are themselves essences they cannot be severed from the entities of which they are the essences. If they are so severed, there is no reason why they too as separate substances should not have their essences separated from them in turn, while at the same time their separate substantiality would prevent them from being attributes of a substantial subject [243]

Metaphysics 1031 B 18-1032 A 6

The identity in question can be established, however, without reference to the nature ascribed to the ideas by those who posit them Since to know anything is to know its essence, it follows that even considered in isolation [244] both must be a single thing (1031 B 20-22) and not only numerically single but also identical in formula (1031 B 32-1032 A 1). To deny this is either to be forced into an infinite regress in which the essence differen-

[243] In 1031 B 11-15 (*ἀνάγκη ἄρα ἓν εἶναι . . καὶ γὰρ τοῦτο ἱκανόν, ἂν ὑπάρχῃ, κἂν μὴ ᾖ εἴδη, μᾶλλον δ' ἴσως κἂν ᾖ εἴδη*) *ἀνάγκη ἄρα* expresses the necessity of the conclusion, *ἱκανόν* that it is sufficient to solve the problems involved in the different aspects of entity and essence (for *ὑπάρχειν* cf 1012 A 29-30) The word *εἴδη* here does not refer to Platonic ideas exclusively but to "forms" of whatever kind (n b the absence of the article and the use of *ἰδέα* wherever in this chapter ideas as such are in question [1031 A 31, B 1, B 16]) Aristotle means that, even if there are *no* forms, the identity of primary entities and their essences is an adequate solution but, if there are forms, the distinction of form and object makes the question of relationship explicit and, the problem thus becoming more acute, the answer is shown to be still more adequate because more necessary. So having shown that the separation of the ideas is inconsistent with their supposed character as essential forms, Aristotle naturally adds that it at the same time abolishes any substantial subject of these supposed essences (1031 B 15-18) These last lines, then, criticize the ideas from the second of the two aspects of essence and entity, they are no "parenthetical remark" as Ross supposes any more than *μᾶλλον δ' ἴσως κἂν ᾖ εἴδη* (1031 B 15) is the merely contemptuous addition which he makes it out to be

[244] Ross (*Metaphysics*, II, pp 178-179) rightly says that *καὶ κατὰ τὴν ἔκθεσιν* here cannot mean the Platonic 'separation', he consequently interprets it as "by the exhibition of instances," following Pseudo-Alexander who paraphrases it with *ἐκ τῆς ἐπαγωγῆς* (*Metaph*, p 484, 10) The sentence gains point, however, if *ἔκθεσις* here refers to that 'logical abstraction" or "isolation" which in *Soph Elench* 179 A 3 is distinguished from the Platonic "separation" by the words *οὐ τὸ ἐκτίθεσθαι δὲ ποιεῖ τὸν τρίτον ἄνθρωπον* (see page 288 *supra*) Aristotle then contends that even the isolation of the essence in thought far from supporting the Platonic view that it is other than the entity proves that the two are identical

tiated from the entity must have an essence different from itself or to put a stop to the regress by positing at some arbitrary point the identity originally denied In that case there is no reason for beginning the distinction at all; if the essence is substantial, why should not some entities be identical with their essences in the first place? This is not to say that there is nothing which is not identical with an essence. Aristotle begins by excluding unities formed by accidental predication: "white man," for example, is not identical with the essence of white man (1031 A 19-28), and he later explains that "accidental terms," since they have two different meanings, *are* in one sense and in one sense are *not* identical with essence inasmuch as τὸ λευκόν, for example, signifies either the subject or the attribute, both being white, it is not the subject, the man or the white man, but the attribute, white, with which the essence of white is identical (1031 B 22-28).[245] Even here the essence is not something different from the particular quality, although this is the quality "white" *per se* and not "something white," just as the unity of entity and essence is in each and every case essential unity. Anything, then, which is something *per se* (ἕκαστον καθ' αὑτό) and just that something itself (αὐτὸ ἕκαστον) is identical with its essence[246]

[245] On Aristotle's attempt to prove that "white man" and "essence of white man" are not identical cf Ross, *Metaphysics*, II, pp 176 177, the truth is that such combinations, consisting of a substance and a term in another category, have no essence (*Metaphysics* 1029 B 22-1030 A 11) or, at any rate, none in the proper sense of the word (cf [Alexander], *Metaph*, p 481, 2-3) In 1031 B 22-28 Aristotle comes back to "accidental terms" immediately after having said ὥστε καὶ κατὰ τὴν ἔκθεσιν ἀνάγκη ἓν τι εἶναι ἄμφω (1031 B 21 22) and then (1031 B 28-32) shows how the denial of the identity stated in 1031 B 22 leads to the regress Thereupon he adds (1031 B 32-1032 A 4) that the entity and essence are not only one but also have the same formula (ἀλλὰ μὴν οὐ μόνον ἕν [1031 B 32] refers back to ἓν τι ἄμφω [1031 B 22]), for "one" and the essence of one are not accidentally one and furthermore if the essence of one were different, an infinite regress would again be involved This regress is the same as that implied in 1031 B 28 32, Aristotle's point being that it cannot be escaped by assuming a merely accidental unity of essence and entity, the ἔτι of 1032 A 2, which Robin thinks distinguishes the two regress arguments (*Idées et Nombres*, note 58), simply joins this argument to that introduced by γάρ in 1032 A 1 2

[246] Although most interpreters have taken Aristotle to mean that the entities with which the essences are identical are particulars (e g Pseudo Alexander

These very arguments, however, are not without serious implications for the doctrine which Aristotle sets up in opposition to the separation of essences as ideas. Of these arguments one was the contention that to know anything means to know the essence of that thing (1031 B 6-7, 1031 B 20-22). Now, if the essence of a particular is identical with that of which it is the essence, the essence itself should be a particular; at any rate, as we have seen, Aristotle later argues against those who posit

[*Metaph.*, p 481, 8-12 and p 483, 17-19], Bonitz [*Metaphysica*, p 318], Natorp [*Platos Ideenlehre*, pp 408-409], Robin [*Idées et Nombres*, pp 54-56], W. Brocker [*Aristoteles*, pp 206-212]), others have disagreed. Asclepius understood them to be τὰ ἀπλᾶ (*Metaph.*, p 396, 21 and p 397, 2), and according to De Corte what is identical with the essence is "la *nature* ontologique de l'être" (*La Doctrine de l'Intelligence*, pp 216-217). Ross in one place explains the identity in question by the example that "'to be a man' sums up the whole substantial, permanent nature of each individual man and is identical with each and every man" (*Metaphysics*, II, p 176) but later says that the question discussed throughout Ζ, chap. 6 is one of universals (*ibid.*, p. 179). Cousin, objecting that these two statements are inconsistent, says that that with which the essence is identical is the species as such "or—what is perhaps the same thing more accurately stated—the individual taken as a member of a species" (*Mind*, N S. LXIV [1955], pp. 175-177), yet he is "far from suggesting that Aristotle was clear about this" and asserts that "in expression" Aristotle "confuses the universal with the individual which is an instance of it". C. Arpe (*Das τί ἦν εἶναι bei Aristoteles*, pp. 41-42), also contending that Aristotle is not directly concerned with particulars in this chapter, says that ἕκαστον alone never means "das reale Einzelding".

The belief that Aristotle is not here thinking of particulars seems to have arisen for one or more of three reasons. 1) It later develops that sensible particulars as complexes of form and matter are excluded from among the primary entities that are identical with essence (cf. *Metaphysics* 1037 B 3-5). 2) In this very chapter "adjectival predicates" such as "white" and "one" are said to be identical with their essences. 3) In 1032 A 6-10 the question of the identity of Socrates and the essence of Socrates is said to be introduced as a "parallel," i.e. "as different from, though allied to" the question discussed throughout the previous part of the chapter, so that this latter cannot have been concerned with "individuals". The last difficulty is merely a misapprehension. The question concerning Socrates is not a "parallel" to the question concerning ἕκαστον but an *example* of it (cf. Asclepius, *Metaph.*, p. 396, 28-31), as is clear from 1022 A 25-27 where ὁ Καλλίας καθ' αὑτὸν Καλλίας καὶ τὸ τί ἦν εἶναι Καλλίᾳ is given as an example of the general statement καθ' αὐτὸ τὸ τί ἦν εἶναι ἑκάστῳ, from 1029 B 13-16 where τὸ σοὶ εἶναι (ἐστι) ὃ κατὰ σαυτόν (εἶ) is an example of ὅτι ἐστὶ τὸ τί ἦν εἶναι ἑκάστου ὃ λέγεται καθ' αὑτό and from the fact that later the questions as to the identity of Socrates and the essence of Socrates, of man and the

ideas that no universal can be essence or an element present in the essence (see pages 318-321 *supra*) Yet, since all knowledge is of universals (see pages 236-239 and notes 131 and 142 *supra*), the essence, being the object of knowledge, ought to be an universal; and, since as the "limit" of the knowledge of each thing the essence is the "limit" of the thing itself (1022 A 8-10; cf. Alexander, *Metaph.*, p. 414, 13), the universal which is

essence of man are answered in exactly the same way they are identical if by Socrates is meant the soul of Socrates, if by man is meant the soul of man (1037 A 5-10, 1043 B 2-4, cf 1036 A 16-17) As for the second consideration, Aristotle is here thinking of the "adjectival predicates" as *particular*, the ἕν which is said to be identical with the essence of one is the ἕν τι constituted by the essence of anything and the entity of which it is the essence (1031 B 22, see note 245 *supra* [cf 1054 A 18 τὸ ἑνὶ εἶναι τὸ ἑκάστῳ εἶναι]), and the "white" with which the essence of white is identical is the πάθος of a particular white man That this treatment of "adjectival essences" implies difficulties for the logic of the doctrine of essence finally considered (see pages 355-357 *infra*) is no reason for denying that it is what Aristotle means in this chapter The same remark holds with respect to the first reason for denying that the entities in question are particulars. Certainly, to suppose that "universals" are meant would not eliminate inconsistency anyway, since the universal "man" is later represented as *not* identical with essence, the latter being soul, the former the combination of body and soul taken generally (1037 A 5 10, 1035 B 27-30); it would, moreover, leave unexplained the criticism of the ideas as "separate essences" which is clearly the motivation for the chapter and which is simply neglected by Arpe when he says that here Aristotle does not go beyond "der ihm mit der Ideenlehre gemeinsame Boden" (*op cit.*, note 62). Arpe rightly censures Bröcker for saying that by αὐτὸ τὸ ἀγαθόν in 1031 A 31 Aristotle means not the idea of good but "das jeweilig einzelne Gute" (*Aristoteles*, p 210); since the αὐτὸ ἕκαστον of 1031 B 19, however, cannot signify the Platonic ideas openly rejected in the preceding lines whereas αὐτοέκαστον is elsewhere a technical term for the ideas (*Eth. Nic.* 1096 A 35 and see note 211 *supra*), it is not too far-fetched to see in this phrase itself a polemical reference and in the whole chapter an answer to such Platonic arguments as that reported by Alexander in commenting on the ἓν ἐπὶ πολλῶν (*Metaph*, p 80, 10-12; see pages 228 and 298 *supra*) At any rate, αὐτὸ ἕκαστον means "each single thing taken alone" which with its essence constitutes ἕν τι. If later it turns out that to take a single thing by itself implies the exclusion of matter, serious questions as to the nature of individuality may arise but it does not mean that the single thing taken by itself and here identified with its essence is for Aristotle any the less a "particular." That the word ἕκαστον of itself *need* not signify the particular as such is of course true Arpe's citations, however, do not prove that it *never* does, in *De Anima* 424 A 21-24, for example, it means just that (. . . οὐχ ᾗ ἕκαστον ἐκεῖνον λέγεται ἀλλ' ᾗ τοιονδί, καὶ κατὰ τὸν λόγον)

the object of knowledge should be the substance of each several thing. This discrepancy between the real and the intelligible is not imaginary or artificial; Aristotle himself formulates it, saying that the greatest difficulty arises from the fact that, all knowledge being universal, the principles of existing things must be universal too, in which case, however, they cannot be separate substances and consequently, since from universal principles only universals can be derived, there can be nothing substantial at all. It must be observed that in the formulation of this problem Aristotle assumes not only that substance must have separate existence in the fashion of particulars but also that the elements or principles of substances must be *either* particulars *or* universals [247] Nor does he solve the problem by openly qualifying this alternative. Instead, he avoids the dilemma by distinguishing between knowledge potential and actual the potentiality, being as matter universal and indefinite, has for its object the universal and indefinite but the actuality, being definite and a determinate thing (τόδε τι), is of a definite and determinate thing Universal color (τὸ καθόλου χρῶμα), Aristotle then says, is seen incidentally because *this* color (τόδε τὸ χρῶμα) which is seen is color, and *this* A (τόδε τὸ ἄλφα) which the grammarian contemplates is A; so universal A, it would appear, is known only incidentally to the knowledge of *this* A.

Metaphysics 1087 A 10 25

The real meaning of this solution is unfortunately not so clearly expressed as is the difficulty to which it is applied. If Aristotle means to say that the sensible particular is the real object of knowledge in the full and proper sense, he is, as many

[247] With a backward reference (1086 B 15 16) to the treatment in τὰ διαπορήματα Aristotle, stating that substance implies separate existence (1086 B 16-19, see page 318 *supra* and Appendix II), has proposed the problem concerning the principles of substances (1086 B 19-20) If these principles are particular and not universal, nothing besides the principles will exist (1086 B 20-32, cf 999 B 27-1000 A 4 and 1060 B 28-30 [where in line 30 read ταῦτα or τοσαῦτα, cf. 1000 A 3, 1086 B 21]) and they will not be knowable (1086 B 22, 32-37, cf 1003 A 13-17 and 1060 B 19-23), if they are universal, either the substances derived from them will be universal (which contradicts the notion of substance already laid down) or, since the principle is prior and as universal must be non substantial, non substance will be prior to substance (1086 B 37-1087 A 4 [for the text cf. Ross *ad loc.*], cf. 1003 A 5-13).

critics have insisted, denying the doctrine which he everywhere else maintains, namely that actual knowledge is of the universal while particulars are objects of sense-perception only, and such a denial should involve him in the relativism which he himself contends is the result of identifying the objects of knowledge with the objects of sensation [248] Since, however, knowledge of all the particular cases is implicit in knowledge of the universal and when the existence of such a particular is recognized the potential knowledge of it is actualized so that knowledge of the universal is in a sense potentially knowledge of the particulars (pages 69-71 *supra*), it might seem, as some have supposed is the case, that Aristotle means to identify all actual knowledge with this recognition whereby the implicit knowledge of particulars becomes explicit [249] Yet when he says that knowledge

[248] See the passages cited on pages 236-239 and in notes 131 and 142 *supra* and especially *Anal Post* 81 B 5-9, 86 A 5 7, 87 B 28-39, *De Anima* 417 B 22-23; *Metaphysics* 1039 B 27-1040 A 5, 1059 B 25-26 Syrianus (*Metaph*, p. 164, 4-8 and p 165, 14-21) calls the "solution" here a flat self-contradiction on Aristotle's part, Werner (*Aristote et l'Idealisme Platonicien*, p 70, n 1 [p 71]) simply dismisses it as not conforming to Aristotle's true opinion Zeller, taking the meaning to be that actual knowledge is of the particular, denies that it resolves the contradiction arising from the doctrines that the real is the intelligible, the universal is the object of knowledge, but only the particular is really existent, for according to Aristotle himself whatever knowledge of the particular there is arises only from the application of universal propositions (*Phil Griech*, II, 2, pp. 309-10) With Zeller's interpretation and judgment of the passage concur Bonitz (*Metaphysica*, p 569, n 1), Natorp (*Platos Ideenlehre*, p. 421), and Kluge (*Einwendungen des Aristoteles*, pp 66-67) Ross, too, considers the solution to be a modification contrary to Aristotle's usual view (*Metaphysics*, II, p 466, cf I, pp cix f.), although he thinks that *De Anima* 417 A 28-29 implies this same modification (the reading in 1048 A 34-35, which he cites for the same modification, he does not himself accept in that passage)

[249] According to Pseudo-Alexander (*Metaph*, pp 791, 34-792, 24) universal knowledge exists potentially as a ἕξις in virtue of which, for example, one is able to prove that any particular triangle set before one has angles equal to two right angles while actual knowledge is ἡ τοιάδε ἐν ἡμῖν γιγνομένη κίνησις ὅταν δείκνυμεν ὅτι τοῦδε τοῦ τριγώνου αἱ τρεῖς γωνίαι δυσὶν ὀρθαῖς ἴσαι εἰσίν, ἥτις καὶ μερική (περὶ γὰρ τόδε τὸ μερικὸν τρίγωνόν ἐστι) λέγεται. Such an interpretation might appear to be supported by *Physics* 247 B 4 7· τὸ γὰρ κατὰ δύναμιν ἐπιστῆμον οὐδὲν αὐτὸ κινηθὲν ἀλλὰ τῷ ἄλλο ὑπάρξαι γίνεται ἐπιστῆμον· ὅταν γὰρ γένηται τὸ κατὰ μέρος, ἐπίσταται πως τῇ καθόλου τὸ ἐν μέρει (but the text is uncertain, cf Ross, *Physics*, *ad loc*, who, supported by the other version, reads τὰ καθόλου τῷ ἐν μέρει and takes it as a reference to "the inductive process").

of the particulars is implicit in knowledge of the universal, he cannot mean that the latter is nothing more than a "possibility of knowing particulars," that one has no actual knowledge of the universal except as one apprehends it realized in a particular In the first place, in such apprehension what was previously potential and is thereby actualized is knowledge of the *particular,* not knowledge of the *universal* at all.[250] He himself insists that *actual* knowledge of the universal is not incompatible with ignorance of the particulars (cf. *Anal. Post.* 79 A 3-6, *Metaphysics* 981 A 21-30, *Eth. Nic.* 1146 B 35-1147 A 3) and that actual grasp of the particular is in itself not knowledge of the universal either actually or potentially (*Anal. Post.* 86 A 22-30), so that there are three kinds of error possible because actual knowledge of the universal, actual apprehension of the particular, and the application of the first to the second are three different states (*Anal. Prior.* 67 B 3-11). Furthermore, the

In that case there is actual knowledge only of sensible particulars, cf [Alexander], *loc cit*, p 792, 9-20, 32 and E Freund, *Aristoteles Stellung zur Platonischen Ideenlehre* (Diss Breslau, 1936 [Teildruck]), p 22 "Ihre volle Aktualitat besitzt die Erkenntnis nur dort, wo sie des konkreten Einzeldings habhaft wird, wahrend aller Inhalt wissenschaftlicher Erkenntnis, die unverganglichen Gedanken der Wissenschaft nur der Moglichkeit und nicht der Wirklichkeit nach sind" Since the recognition of the particular is sense-perception, however, those who identify the actualization of knowledge with the recognition of the potential universal as an actually existing particular must say, as Vogelbacher expressly does (*Begriff und Erkenntnis der Substanz bei Aristoteles,* pp 200-201), that there is actual knowledge only during the actual functioning of sense-perception De Corte, for example, in explanation of the *Metaphysics* passage says "L'acte de la science consiste en effet à rapporter au réel des universaux logiques qu'elle possède en puissance et qui, dès lors, perdent leur qualité logique pour acquérir qualité réelle" (*La Doctrine de l'Intelligence chez Aristote,* p 224, n 2), it is difficult to see how this comes to anything other than the conclusion of Vogelbacher, for, if the only authentic reality is the essence realized as particular substance (cf *op. cit*, p 213), "rapporter au réel" can mean only the recognition of these particulars as embodying this universal (which by that very act, apparently, ceases to be an universal), while such recognition is dependent upon the sensible perception of the particular (cf De Corte's interpretation [*op cit.*, p 70] of τόδε τὸ ἅλφα in *De Anima* 417 A 29, the object of actual knowledge, as "cet A qu'il a sous les yeux").

[250] Cf Simplicius, *Phys.*, p 1075, 14-17 (on *Physics* 247 B 4-7, quoted in note 249 *supra*): ὁ γὰρ νοῦς ἐπιστήμην ἔχων τῶν μὲν καθόλου ἀεὶ κατ' ἐνέργειαν εἴτε πρόχειρον εἴτε μή, τῶν δὲ ἐν μέρει δυνάμει, ὅταν ἡ αἴσθησις προσβάλλῃ τῷ μερικῷ, τότε οὖν ὁ νοῦς ἐνεργείᾳ γινώσκει τῷ καθόλου τὰ ἐν μέρει.

recognition of a particular as the realization of an universal should itself presuppose *actual* knowledge of the universal (see page 79 *supra*), and Aristotle himself, when establishing the priority of actuality, argues that the concept of the geometer is actuality prior to the potency of the particular construction which is actualized by that prior actual knowledge (*Metaphysics* 1051 A 29-33; cf. Ross, *Metaphysics*, II, pp 272 f.). Finally, had Aristotle made the particular in any sense the object of actual knowledge, he could not have distinguished knowledge from sensation by asserting that the actualization of the former is *not* dependent, as that of the latter *is*, upon external objects (*De Anima* 417 B 19-26)

In the same chapter of the *De Anima* in which this distinction is made and the reason given for it that actual sensation is of particulars while actual knowledge is of universals (417 B 22-23) he whose knowledge is actual is said to be knowing in the proper sense of the word τόδε τὸ ἄλφα (417 A 28-29). This cannot be interpreted as a particular here without convicting Aristotle of self-contradiction as obvious as it would be unnecessary; τόδε τὸ ἄλφα in this context is that intelligible object which, actualized in thought, is thereby distinguished from all other intelligibles at that moment existing only "potentially" in the mind of the man who knows them. There is, then, no inconsistency in the use of τόδε τὸ ἄλφα to designate the object of actual thought even though this object is an universal, for that designation indicates only that when the scientist is actually exercising his science the object of his thought is not the science as such but a certain definite unit or theorem of it.[251] Now, when as a solution of the problem in the *Metaphysics* Aristotle identifies "universal knowledge" with potentiality and from it distinguishes the actuality as "definite and a determinate

[251] So Plotinus understood the passage which suggested to him the comparison of *Enn.*, VI, 4, 16· ἡ γὰρ ἐνέργεια αὐτῆς οὐκέτι πρὸς τὸ ὅλον καίπερ τοῦ ὅλου οὔσης, ὥσπερ ἂν εἰ ἐπιστήμης ὅλης οὔσης κατά τι θεώρημα ὁ ἐπιστήμων ἐνεργοῖ· τὸ δ' ἀγαθὸν αὐτῷ ἦν οὐ κατά τι τῆς ἐπιστήμης ἀλλὰ κατὰ τὴν πᾶσαν ἣν ἔχει. See also Themistius, *De Anima*, p. 95, 13-16 (. . . νοῦς ἀνάλογον ἔχων τῷ ἐπιστήμονι, ὅστις τὰ θεωρήματα τῆς ἐπιστήμης συνειληχὼς οἷός τε καθ' ἑαυτὸν ἐνεργεῖν ἕκαστον αὐτῶν ἰδίᾳ προχειριζόμενος . . .) and 23-32 (cf. p. 56, 20-25); Priscian, *Metaphrasis*, pp 30, 13-31, 7.

thing," one is reminded of his argument against the ideas to the effect that "absolute knowledge" is only a potency of which the actuality is a "knowing subject" (1050 B 34-1051 A 2, pages 333-334 *supra*); the αὐτοεπιστήμη of that passage is the καθόλου ἐπιστήμη of this, and the contention here that the correlate of this "universal and indefinite" potentiality is the "universal and indefinite" while of the determinate actuality the object must be a determinate thing,—this is merely an application of the rule of correlation laid down in the *Republic* where by way of illustration it is said that of knowledge in the "absolute" sense (ἐπιστήμη αὐτή) the correlate is "absolute" but any particular and definite knowledge is of a particular and definite object (*Republic* 438 A-439 A [see note 189 *supra* and cf. *Charmides* 171 A 5-6, *Sophist* 257 C 10-D 2]) As for Plato, however, this means only that, while "knowledge" without qualification is of the "intelligible" without restriction, of every definite act of knowledge the correlate is a definite intelligible entity (cf *Parmenides* 134 A 3-7 and Proclus, *In Parmenidem*, p 738 [Stallbaum] = p. 944, 38 ff. [Cousin²]. ὡς οὖν ἡ ὅλη νόησις τοῦ ὅλου νοητοῦ, οὕτω καὶ αἱ πολλαὶ νοήσεις τοῖς πολλοῖς ἥνωνται νοητοῖς), so Aristotle's use of the formula proves merely that the correlate of any actual knowledge is a definite intelligible object and not "the intelligible in general" but it indicates nothing as to the nature of the object as intelligible.[252] This distinction between actual and universal knowledge, then, does not touch the problem to which only the ambiguity of the word

[252] Cf Zeller, *Phil Griech*, II, 2, p 198, n 6, where, in spite of his treatment of the passage referred to in note 248 *supra*, he says "Damit ist aber doch nur gesagt: die Anlage zum Wissen gehe auf das Erkennbare uberhaupt, jedes wirkliche Erkennen dagegen sei Erkennen eines bestimmten Gegenstandes, ob dieser Gegenstand ein Einzelding oder ein allgemeiner Begriff ist, kommt nicht in Betracht Das καθόλου bezeichnet hier das Unbestimmte" So in *Metaphysics* 1026 A 25-27 geometry, being μαθηματική τις, is περί τινα φύσιν (which is, of course, not a 'particular") whereas ἡ καθόλου μαθηματική is πασῶν κοινή Pseudo Alexander (*Metaph*, p 447, 16) calls this καθόλου μαθηματική rightly ἡ ἁπλῶς μαθηματική and Asclepius (*Metaph*, p 364, 14-15) says ἡ καθόλου μαθηματική περί πάντα τὰ μαθηματικὰ καταγίνεται, ἡ δὲ μερικὴ περί μίαν φύσιν. Similarly the potential knowledge of the *Metaphysics*, which being universal is of the universal, is really ἡ ἁπλῶς ἐπιστήμη which is of τὸ ἁπλῶς ἐπιστητόν and of this correlation the consequence is only that actual knowledge is ἐπιστήμη τις which is always of ἐπιστητόν τι.

καθόλου gives it a semblance of applicability; but the explanatory analogy which directly follows shows that, though Aristotle consciously or unconsciously continues to exploit that ambiguity, the solution which he is seeking to formulate has a deeper significance Comparing the act of contemplation with that of vision he explains the universal not as the correlate of the potency but as the *incidental* object of the actuality. The universality of A is known incidentally to the knowledge of the definite object A, because this A is A We have already seen that to designate the object of actual knowledge "this A" (τόδε τὸ ἄλφα) need not mean that it is a particular and that if this is what Aristotle does mean here he manages to solve his "greatest difficulty" only by renouncing the basic principles of his philosophy Besides involving him in the self-contradictions already mentioned, such an interpretation of his solution would make him here assert that the sensible particular is ὡρισμένον and not ἀόριστον (so [Alexander], *Metaph*, p 792, 9-15), whereas he constantly maintains the opposite, holding that particulars are inaccessible to knowledge because of the indeterminate element in them (see note 253 *supra*), and would make him explain knowledge of the universal as incidental to knowledge of that of which he elsewhere says there is neither demonstration nor knowledge except in an accidental sense (*Anal. Post.* 75 B 24-26).

Still, if the object of knowledge is not here meant to be a particular, it is certainly thought to be an entity of which universality is not the essential characteristic. Now, in the *De Anima*, where it is said to be an universal, a distinction between actual and potential knowledge is also made, and there the object of the former is the actualized intelligible form, which when not actually known is potentially intelligible and as such the correlate of potential knowledge (*De Anima* 431 B 20-432 A 3, 430 A 19-20). The intelligible forms exist potentially in the material objects and still potential in the sensible forms are mediated to the mind by sense-perception (*De Anima* 430 A 6-7, 432 A 3-6), of which though the object is a particular the content is universal (*Anal. Post.* 100 A 16-B 1 [cf. 87 B 28-30], see note 57 *supra*) They are actualized as intelligible by νοῦς with which in this state they are identical and thus actualized

they are free of matter, which is the source at once of indeterminateness and particularization [258] If, then, the potentially intelligible form exists dispersed in the sensible particulars whereas, as actually known, it is departicularized and absolved from the matter in which it is realized in nature, its universality as the form of all these particulars may be regarded as known

[258] Even in the case of the "productive sciences" the object of actual knowledge is not the form particularized but the essential form without the matter (*Metaphysics* 1075 A 1-3, 1032 A 32-B 14 [but for the actuality of the productive arts contrast *De Anima* 417 B 26-28 and cf Theophrastus, *Metaphysics* 9 A 2 4]), it is thus that actual knowledge and the "thing known" are identified (*De Anima* 430 A 3-9, 19-20, 431 A 1-2; cf *Metaphysics* 1072 B 20-23), for actual knowledge corresponds to τὰ ἐντελεχείᾳ πράγματα (*De Anima* 431 B 24-26), not the concrete particulars themselves but their εἴδη (431 B 28-29, cf Theophrastus *apud* Priscian, *Metaphrasis*, p 37, 24-30)

The matter, which is the cause of particularization (*Metaphysics* 1035 B 30-31, 1074 A 33-35 [see Appendix V]), being at the same time the cause of the accidental (*Metaphysics* 1027 A 13-15, 1032 A 20 22) and indeterminate character of the concrete particular, is the cause of its being inaccessible to knowledge (*Metaphysics* 1010 A 1 4 [Alexander, *Metaph*, pp 307, 34-308, 10], 1037 A 26-30 [cf 1039 B 27-31 and *Anal Post* 88 B 30 89 A 10) and, as the element of indeterminateness, is contrasted with the form as determinate (*Metaphysics* 1063 A 27-28 [cf 1010 A 24-25 and Alexander, *Metaph*, p 310, 9-23], *Physics* 210 A 6-9 [cf *Metaphysics* 989 B 18], and for essence as πέρας *Metaphysics* 1022 A 8 10 and the passages cited in note 83 *supra*)

At *Metaphysics* 1036 A 2-8 a distinction is made between sensible particulars (e g circles of bronze or wood) and "intelligible particulars" (e g "mathematical" circles) Of neither of these is there definition, but they are apprehended μετὰ νοήσεως ἢ αἰσθήσεως, the sensibles with the aid of the latter, the mathematical particulars with that of the former The faculty here called νόησις has sometimes been identified with the "rational intuition" which is superior to science (cf Ross, *Metaphysics*, I, p cix), but, since the mathematical particulars as well as the sensibles have a material constituent and matter—whether sensible or not—is in itself unknowable (*Metaphysics* 1036 A 8 12, 1037 A 1-5), this νόησις must be different (either in kind or in degree see note 57 *supra* and cf *De Anima* 429 B 18-22 [to the difference between the mathematical particular and its essence corresponds a difference in faculty or method of apprehension]) from the νοῦς which knows the form free from all matter and which is superior to discursive knowledge (*Anal. Post* 100 B 5-17 [cf 85 A 1, 88 B 35-36], *Metaphysics* 1072 B 20-23 [cf 1051 B 17-1052 A 11, *De Anima* 430 A 26-28, 430 B 27-31; *De Gen Animal* 742 B 29-35], *Eth Nic* 1140 B 31-1141 A 8) In *Eth Nic* 1143 A 35-B 1, to be sure, it is said that ὁ νοῦς τῶν ἐσχάτων ἐπ' ἀμφότερα καὶ γὰρ τῶν πρώτων ὅρων καὶ τῶν ἐσχάτων νοῦς ἐστι καὶ οὐ λόγος, but the next words show that νοῦς here is a general term for two different faculties καὶ ὁ μὲν κατὰ τὰς ἀποδείξεις τῶν ἀκινήτων ὅρων καὶ πρώτων, ὁ δ' ἐν

only incidentally to the knowledge of it as a single, determinate unit, for this universality is just the possibility of repeated realization in a multiplicity of particulars.[254] This appears to be the meaning of Aristotle's solution in the *Metaphysics*, where, it should be noted, the question is put *not* with regard to the substances which are admittedly separate and particular (i. e. for Aristotle himself the "sensible substances") but with regard to their *principles* (cf. 1086 B 19-20) the nature of which will determine the nature of those substances of which they are the principles. Consequently, when Aristotle contends that these principles as objects of knowledge are not universals (cf. the conclusion, 1087 A 21-24) he must be referring to the forms or essences which are for him the ἀρχαί of concrete, sensible substances (*Metaphysics* 1041 B 11-33, cf. *De Part. Animal.* 642 A 17-26); and his explanation is that what is known directly, the definite form A, is not as such universal but the knowledge of it is incidentally knowledge of the universality of that form as the form of all A's.[255]

ταῖς πρακτικαῖς τοῦ ἐσχάτου καὶ ἐνδεχομένου καὶ τῆς ἑτέρας προτάσεως. In *Eth. Nic* 1142 A 23-30 the "intuition" of the mathematical particular is assimilated to sense-perception or, more exactly, to perception of the "common sensibles" and thereby, along with φρόνησις, is expressly *opposed* to the νοῦς τῶν ὅρων.

[254] For the necessary unity of the object of thought cf *Metaphysics* 1006 B 10, *Anal. Post.* 84 B 39 85 A 1 (see also note 258 *infra*) and on Aristotle's attitude toward the "unity of the concept" as an argument for the existence of the ideas (*Metaphysics* 990 B 24-26) see pages 272-275 and note 206 *supra*. The notion that universality is an "accident" of the object of definition is developed by Alexander, cf. *Quaestiones*, I, iii, p 8, 12-13 [Bruns] διὸ οὐδὲ τῶν κοινῶν ὡς κοινῶν αἱ ὁρισμοί, ἀλλὰ τούτων οἷς κοινοῖς καθ' ἑκάστην φύσιν εἶναι συμβέβηκεν and I, xi b, p 23, 25-32. τὸ μὲν ὑποκείμενον ᾧ τὸ καθόλου συμβέβηκε πρᾶγμά τί ἐστι, τὸ δὲ καθόλου τὸ ἐκείνῳ συμβεβηκὸς οὐ πρᾶγμά τι καθ' αὐτό ἐστιν, ἀλλὰ συμβεβηκός τι ἐκείνῳ, οἷον ζῷον πρᾶγμά τί ἐστι καὶ φύσεώς τινος δηλωτικόν . . . ὃ κατὰ μὲν τὴν αὐτοῦ φύσιν οὐκ ἔστι καθόλου οὐδὲν γὰρ ἧττον ἔσται, καὶ εἰ ἓν κατ' ἀριθμὸν ὑποτεθείη ζῷον εἶναι ὑπάρχει δὲ αὐτῷ ὄντι τοιούτῳ ἐν πλείοσιν εἶναι καὶ κατ' εἴδος ἀλλήλων διαφέρουσιν. συμβέβηκεν οὖν αὐτῷ τοῦτο (see note 256 *infra*).

[255] It is the analogy of τόδε τὸ ἄλφα with τόδε τὸ χρῶμα that has caused most commentators to assume without more ado that the former is meant to be a sensible particular. Yet Aristotle elsewhere uses the relation of vision to its object to illustrate that of νοῦς to its objects where the latter are clearly the immaterial forms or essences (*De Anima* 430 B 27-31), and as there the infallibility of vision and of νοῦς in the direct apprehension of their proper objects

If, however, this universality is accidental because it is merely the repeated particularization of the essence—or the possibility of such repetition—then each and every particularization is similarly accidental to the essence itself;[256] but in that case

does not imply that these objects are of the same order so here the statement that in both cases the universality of the object is apprehended incidentally does not imply that both objects are sensible particulars (cf Alexander, *Top*, pp 117, 29-118, 13 on *Topics* 108 A 9-11) Moreover, Aristotle's treatment of written and spoken letters as ὕλη *αἰσθητή* of the syllable and his distinction of these from the essential forms of the letters to which alone the formula or definition of the syllable refers (*Metaphysics* 1035 A 14-17) make it most unlikely that the *τόδε τὸ ἄλφα* which stands for the object of knowledge is meant to be such a particular letter

For color as the necessary correlate of vision see *Metaphysics* 1021 A 33-B 3 and *De Anima* 418 A 29 and cf Plato, *Charmides* 167 D 1. If the analogy in the present passage is to support Aristotle's solution, *τόδε τὸ χρῶμα* must mean not merely "this color" in the sense, e g, of "white" as differentiated from all other colors but this particular patch of color (e g *τὸ τί λευκόν*, cf *Categories* 1 A 23-29 and [Alexander], *Metaph*, p 793, 4-6), except in the *Categories*, however, Aristotle seems not to distinguish explicitly between universal and particular in the categories other than substance (cf Ross, *Aristotle*, p 24, n 1 and the criticism of Plotinus, *Enn.* VI, 3, 9 [lines 19-22, Bréhier])

[256] See the statement that in the generation or production of composite substances the form or essence is not produced *εἰ μὴ κατὰ συμβεβηκός* (*Metaphysics* 1033 A 24-31), there the incompatible aspects of essence as an eternal principle of generation and as the form realized in perishable particulars are reconciled by making the particularization accidental to the real nature of the essence This itself shows that universality, viewed as an accidental characteristic, must be an accident of the essence *as such*, not of the essence realized in a particular; it is not the essence particularized to which attaches the possibility of repetition, for each particularization is itself a *manifestation* of this characteristic of the essence. Thus when Alexander says that *ἐν πλείοσιν εἶναι καὶ κατ' εἴδος ἀλλήλων διαφέρουσιν* is an accident of *ζῷον* (see note 254 *supra*) the subject of this "repetition" which constitutes universality is clearly not any *particular* animal but animal *as such* This universality which is the genus, being posterior to the essence of which it is an accident (*Quaestiones*, I, xi b, p 24, 4-16), is correlative with the multiplicity of which it is the genus (*ibid*, 17-19) and therefore prior to any one of the particulars of this multiplicity (*ibid*, 16-22, cf. *op cit*, p 23, 11-13). To this correlation of "generic universality" and the multiplicity of particulars are to be referred the reports that according to Alexander the existence of the universal depends upon that of the particulars (Simplicius, *Categ*, pp 82, 22-28 and 85, 5-9; Dexippus, *Categ*, p 45, 15-22 [. . *ὅταν γὰρ ἐνὸς ἑκάστου πρῶτα φύσει λέγωσι τὰ καθόλου, πάντως δὲ πάλιν ὕστερα . . .*]).

De Corte interprets *Metaphysics* 981 A 19-20 and 1030 B 20-21 to mean that "man" is an accident of Callias and Socrates, i. e. that the universal is an

Aristotle solves his problem only by tacitly rejecting the alternative which he himself pronounced (see note 247 *supra*), for the essential forms, which are the principles of particular substances and the objects of actual knowledge, must now be themselves *neither* particular *nor* universal This is not, however, his customary attitude toward the matter; [257] on the contrary, he asserts without qualification that the essential form is an universal, characterizes as a "single universal" the object of knowledge which is necessarily a determinate unit, and establishes a direct connection among universality, determinateness, and intelligibility.[258] Universality in this sense is certainly some-

accident of the essence realized as a particular (*La Doctrine de l'Intelligence*, pp. 196, 201, n 5, 214, n 1), this is a mistake, for *συμβέβηκε* there is used as it is in *De Anima* 425 A 26-27 *τούτῳ* (*scil* *τῷ* λευκῷ) *συμβέβηκεν υἱῷ* Κλέωνος *εἶναι* (cf. also *Categ* 7 A 32-39 [referred to by Asclepius, *Metaph.*, p. 9, 9-14] and *Metaphysics* 1013 B 36-1014 A 6, where Polyclitus, man, and animal are called "accidents" of the sculptor)

[257] De Corte contends (*La Doctrine de l'Intelligence*, pp 200-202) that the "*tendance* foncière" of Aristotle's doctrine is that the essence as such is neither individual nor universal but forms a complex of internal determinations reducible according to circumstances either to universality or individuality, that it is particular in the physical reality of which the mental image is a representation and universal in the conception which the mind forms of it in referring it to its various realizations (cf *op cit.*, pp 207-208; *id*, *Aristote et Plotin*, pp 52-53, 59-60) Yet even as he interprets the texts De Corte can say at most "On aperçoit, emergeant presque au niveau de la pensée effectivement exprimée, cette notion, conquête définitive de la scolastique aristotélicienne, que la quiddité n'est *de soi* ni universelle ni individuelle" (*Aristote et Plotin*, p 55) De Corte's interpretation of the texts which he thinks support his thesis is uniformly unconvincing; and, had the notion been clear in Aristotle's mind, we should have expected him to express it in the crucial passage of the *Metaphysics* with greater exactness and without the confused analogies which have been pointed out above Moreover, had it been a settled doctrine of Aristotle's, Theophrastus would probably have mentioned it in the passage where he considers the object of knowledge (*Metaph.* 8 B 10-9 A 9); but he there has only the conventional statement that except for objects of action and production, in which the end of knowledge is a particular because such is their actuality, knowledge is of the universal in which the cause consists (8 B 27-9 A 4) and again that knowledge is of *τὰ ἴδια* because the essence of each thing is peculiar but that knowledge comprehends *τὸ αὐτὸ ἐν πλείοσιν* and that complete knowledge consists of both (8 B 20-27), and he suggests no reconciliation of these contradictory characteristics

[258] For the essence as universal cf. *Anal. Post.* 79 A 28, 90 B 3-4, *Metaphysics*

thing quite different from that which is explained away as being merely accidental to the object of actual knowledge, for that "accidental universality" is "indeterminate" and "indefinite" (cf. 1087 A 17: τοῦ καθόλου καὶ ἀορίστου), the sort of "universal" which reckoned as indeterminate in significance is in *Physics* 184 A 23-B 14 said to be apprehended by sense-perception (see note 57 *supra*), in short the actual *sensible* forms which as containing the single intelligible form potentially are the correlate of potential knowledge In other words, the universality accidental to the essence is the extension of the term which for Aristotle consists in the realization of the essential form in an indefinite multiplicity of particulars; this may be treated as accidental to the true nature of the form and as known only incidentally to the knowledge of the form itself, but from this it does *not* follow that the direct object of actual knowledge is in itself and essentially not universal in *any* sense recognized by Aristotle On the contrary, since it is a simple form exempt from matter and consequent particularity, it must be universal not in the sense of mere extension but, like the object of first philosophy, as primary and prior to the extension which presupposes it and depends upon it.[259] It is only in this sense that in the *De Anima* the simple forms which are the objects of actual knowledge can be called "universals" and as universals be said to make the actualization of knowledge independent of

1036 A 28-29 with 1035 B 31-1036 A 2; and for the single universal which is the object of knowledge cf. *Anal. Post* 100 A 5-9, *Metaphysics* 981 A 5-17, n b. *Anal. Post.* 74 A 25-32· even knowledge of all the particulars will not furnish knowledge of the universal, for to know the universal is to know *not* πᾶν κατ' ἀριθμόν *but* πᾶν κατ' εἶδος (cf *Metaphysics* 981 A 10) Intelligibility varies directly with universality, since objects are intelligible in so far as they are determinate and determinateness varies directly with universality (*Anal Post.* 86 A 3 8 [cf Philoponus, *Anal. Post*, p 283, 6 20]).

[259] Cf *Metaphysics* 1026 A 23-32 and 1064 B 6-14, where in introducing the question as to whether or not first philosophy is "universal" Aristotle begins with "universal knowledge" in the sense of knowledge the object of which is general and *unrestricted* (. . καθόλου . . . ἢ περί τι γένος καὶ φύσιν τινὰ μίαν [for the analogy with mathematics see note 252 *supra*]) just as he does in *Metaphysics* 1087 A 10 25 (see pages 343-347 *supra*), but here he solves the problem by dismissing the sense of καθόλου to which he there clings and by dwelling instead upon the other sense, καθόλου οὕτως ὅτι πρώτη (cf. *Anal. Post.* 85 B 25-26: τὸ δὲ καθόλου πρῶτον· αἴτιον ἄρα τὸ καθόλου).

external agents (cf. Simplicius, *De An.*, p. 124, 14-18); and in this sense the universality of the objects of knowledge and so of the principles of existing things remains a necessity unshaken by the "solution" of the *Metaphysics*.

If, however, "universal" be restricted in meaning to the sense in which it is asserted to be only an accident of the essence and if, in consequence, the essential form itself is taken to be neither particular nor universal, it is, to say the least, inappropriate for Aristotle to assume that the Platonic ideas, because they are other than the sensible particulars, can be nothing but universals and then to argue that being universals they cannot be substances.[260] If, on the other hand, "universal" means something more than the extension of a common term and the essence is itself universal as a primary unit, there is no cogency in the contention that the ideas, since they are determinate units, are in effect simply particulars. Aristotle holds that the ideas are self-contradictory because they are at once universals and definite units; but he can support this objection only by limiting universality to the extension of the common term and at the same time making of universal and particular a strict alternative, that is by assuming that what is individual must be a sensible particular.

Yet, just as he finds this restricted sense of universal inadequate for his own system, so he cannot consistently maintain that the particular is the true individual Much as he dwells upon the individuality of the particularized form, especially when opposing the theory of separate ideas, it is the essence or form *as such* which he elsewhere makes the primary unity and which alone and in contrast to the concrete particular he treats as fully determinate.[261] As when faced with the crucial

[260] Cf the objection of Syrianus to this alternative and his contention that the ideas themselves are neither particular nor universal (*Metaph*, p. 163, 9-14 [cf. p 160, 23-28]); also Proclus, *In Parm.*, p. 564 (Stallbaum) = p 731, 8-23 (Cousin[2])

[261] For the form as unity in the primary sense cf. *Metaphysics* 999 A 2-4 and 1052 A 33-34, and for τόδε τι used of the essential form cf especially *Metaphysics* 1017 B 24-26 (cf. 21-22), 1042 A 29, 1049 A 35, 1070 A 9-15, *De Generatione* 318 B 32. Ross says (*Metaphysics*, I, p cxix) that "the passages in which form is described as τόδε τι should probably be interpreted in the light of the more precise passage in which it is described as that in virtue of which,

question whether the object of first philosophy is a special entity or universal as the common character of all entities he openly rejected the alternative and declared it to be primary and as primary universal, so he declares the primary essence to be a unit both in definition and in number just because, being complete actuality, it is without matter, consequently, the particularization, that is the materialization, of an essence must be a derogation of actuality and thus an impairment of the complete determination which characterizes individuality.[262]

in contrast with matter, a thing can be called *τόδε τι*." By "the more precise passage" he apparently means *De Anima* 412 A 6-9 (see note 98 *supra*), De Corte (*La Doctrine de l'Intelligence*, p 199, n 5) stresses the same passage, saying that the important word is λέγεται (i e *μορφὴν καὶ εἶδος καθ' ἣν ἤδη λέγεται τοδε τι*), that the meaning is simply that "c'est la forme, et non pas la matière, qui nous permet *de penser et de dire* que tel être est un *τόδε τι*," and that the case is the same in all the passages in which form is described as *τόδε τι*. One may admit this interpretation for the passage of the *De Anima* without in the least agreeing that the passages in which the form is called *τόδε τι* either have the same purport or can possibly be so interpreted In none of those cited above is it intimated that the form is *τόδε τι* only as that in virtue of which the particular is called or thought to be *τόδε τι* In 1017 B 10-26 and 1042 A 26-31 the form is *τόδε τι* in contrast to the particular as well as to matter, and in 1070 A 9-15 the concretion of matter and form is explicitly distinguished as *particular* substance (*ἡ καθ' ἕκαστα οὐσία*) from the form as *τόδε τι* The equation of form and *τόδε τι* in *De Generatione* 318 B 32 is of special interest, for it involves the doctrine that determinateness varies directly with the degree to which matter is eliminated, so that that would be *τὸ μάλιστα τόδε τι* which is pure form without matter (cf 318 B 14-18 and Joachim, *On Coming-to be and Passing-away*, pp 100-102). On the passage in the *Metaphysics* where Aristotle attacks, as he does here in the *De Generatione*, those who, he believes, were relativists because they identified the real with the sensible and who, he says, spoke plausibly but not truly, Alexander remarks (*Metaph*, p 308, 5 7) that the plausibility is due to the fact that they were speaking only of sensible objects, none of which is *ὡρισμένως τόδε τι*.

[263] *Metaphysics* 1074 A 35-37 *τὸ δὲ τί ἦν εἶναι οὐκ ἔχει ὕλην τὸ πρῶτον, ἐντελέχεια γάρ· ἓν ἄρα καὶ λόγῳ καὶ ἀριθμῷ τὸ πρῶτον κινοῦν ἀκίνητον ὄν.* Jaeger (*Aristoteles*, pp 376-379) argues that 1074 A 31-38 is an insertion into the text of the otherwise late chap 8 of Λ "Aristoteles hat ihn zu dieser Ausfuhrung wohl als Einwand, den er sich selbst gemacht hat, notiert, und die Redaktoren haben ihn getreulich in den Text gesetzt" According to Ross (*Metaphysics*, II, p 384) the passage "seems to be a fragment belonging to the earlier and more monistic period of Aristotle's thought" Arpe, on the other hand, thinks that the peculiar use of *τὸ τί ἦν εἶναι τὸ πρῶτον* presupposes the investigations in Z and H and therefore contends that this passage itself confirms

In this absolute sense of the term "actuality," then, only the essential form exempt from matter is completely determinate, individual, and real, but, besides using the term to characterize the form or essence as distinct from the concrete particular which always involves an element of potentiality, Aristotle commonly considers the form to be the actuality *of* the matter, the state in which the matter is a particular substance.[263] In this

Jaeger's demonstration of the late composition of chap 8 of Λ It is sufficient for our present interest to observe that, even if Jaeger's explanation is correct, the passage cannot be explained away as an early doctrine later rejected or outlived and so not indicative of Aristotle's maturest thought, for, if Aristotle wrote it as a note on the margin of chap 8, he wrote it *later* than chap. 8 and presumably because he believed it to be a cogent argument

[263] For the form as actuality distinguished from the concrete substance see *Metaphysics* 1043 A 29-35 (cf 1050 B 2 *ὥστε φανερὸν ὅτι ἡ οὐσία καὶ τὸ εἶδος ἐνέργειά ἐστιν*), the essential forms are incomposite and fully actual units (*Metaphysics* 1051 B 26 32, 1051 B 35-1052 A 4 [for *αἱ μὴ συνθεταὶ οὐσίαι* cf 1027 B 27-28, *De Anima* 430 A 26-27, 430 B 27-31 and with 1051 B 29-30, *νῦν δὲ τὸ ὂν αὐτὸ οὐ γίγνεται οὐδὲ φθείρεται*, cf 1033 B 5-7, 16 17, 1043 B 16-18, 1047 A 2]), and the unity which characterizes substance is the unity of complete actuality (*Metaphysics* 1044 A 7-9 *ἡ οὐσία ἓν οὕτως . . ἐντελέχεια καὶ φύσις τις ἑκάστη* [not the "concrete substance," for this is not *φύσις* but *φύσει* or *κατὰ φύσιν*, but the essential form which can be neither an element in composition nor a composite unity, 1041 B 19-33]) which, admitting no variation in degree holds for the form as such, not for the concrete sensible (1044 A 9-11 *καὶ ὥσπερ οὐδὲ ὁ ἀριθμὸς ἔχει τὸ μᾶλλον καὶ ἧττον οὐδ' ἡ κατὰ τὸ εἶδος οὐσία, ἀλλ' εἴπερ, ἡ μετὰ τῆς ὕλης* [according to *Categories* 3 B 33-4 A 9 *τὸ μᾶλλον καὶ τὸ ἧττον* is not admitted by the concrete sensible substance, the *πρώτη οὐσία* of that writing, but in *De Generatione* 321 B 16-322 A 4 it is the embodied form, i. e. the concretion, that grows, not the matter itself nor, of course, the form as such], cf. 1043 B 36-1044 A 2 and for the notion Plato, *Cratylus* 432 A-B, *Dialexis* [Diels, *Frag der Vorsok*[5], II, p 413, 18 ff]) Notice also that Aristotle's theory of evil rests upon the doctrine that concrete substance, being material, falls short of complete actuality (see notes 62 and 176 *supra*)

On the other hand, the concretion "consists of" matter and form in the sense that these are two aspects of which the latter is the actuality of the former (cf. *Metaphysics* 1043 A 26-28), the actuality, being the state of the matter as a particular thing (1048 A 30-B 9, 1050 A 15-16, cf *Physics* 193 B 7-8), expresses the identity of the two aspects in the concretion (1045 A 23 33, 1045 B 17-22, *De Anima* 412 B 6 9; see also note 98 and page 329 *supra*)

See further the division of that which is only actual or pure actuality (i e primary substances or pure forms), that which is both potential and actual (i. e concrete sensibles), that which is only potential (on this cf Ross, *Physics*, p 535)· *Physics* 200 B 26-28 (cf Simplicius, *Phys*, p 398, 7-11), *Metaphysics* 1065 B 5-7, *De Interpretatione* 23 A 23-26.

sense actuality is just what any particular thing is, and it is from this point of view that Aristotle urges against the ideas the arguments that the matter of concretions is always involved in their definitions, that the form, being a qualification of a definite thing, has reality only in the thing so qualified, and that the essence cannot be other than the entity of which it is the essence. Yet the limitations imposed upon this last principle by Aristotle himself rob it of its efficacy as a refutation of the ideas, while the method of the regress by means of which he supports it is based on an unwarranted and unsupported assumption. The contention that, since the essence of an idea is identical with that idea, the ideas must be identical with the entities of which they are the essences and that, if they are distinguished from these entities, the ideas again must have essences distinct from themselves,—this would be plausible only if the essences distinguished as ideas were themselves entities of the same order as the phenomena from which they are differentiated; Aristotle presumes that the essences if separated must be particulars like the particulars of which they are supposed to be the essences, so that his regress, resting upon the same assumption as does the "third man" argument, must stand or fall with it and to Plato, at any rate, would seem to have no cogency (see pages 293-300 and 307-312 *supra*). Even Aristotle, however, restricts the identity in question to "primary and self-subsistent" entities, so that its applicability waits upon the determination of what these entities may be. For those who assert that the ideas are and that phenomena are not "primary and self-subsistent" it means only that the former are and the latter are not identical with their essences; to become a valid argument against the doctrine of ideas it would require the further demonstration that the concrete substances *are* primary. This Aristotle does not attempt to establish; on the contrary, the sensible particulars which in the *Categories* are called πρῶται οὐσίαι (cf. 2 A 11-B 6) he here excludes from among "primary substances" when he concludes that concretions of matter and form as well as "accidental combinations" are *not* identical with their essences (*Metaphysics* 1037 A 33-B 7), so that in the case of the very things of which he maintained there could be no ideas because their matter is involved in their definitions it

turns out that the essence is other than the entity just because the latter is a materialized particular. Moreover, if the concretion and its essence are not identical and if it is the form as actuality that is the essence (1043 B 1-2), concrete particulars ought never to be identified with actuality, the particular, since it always contains an element of potentiality (1010 A 3-4, cf. 1050 B 27), is never a perfect unity, never entirely achieves the actuality of the essential form which is its τέλος (*Physics* 198 B 1-4, *Metaphysics* 1044 A 36-B 1). So the canon that the essence is not to be distinguished from the "thing itself" (cf. αὐτὸ ἕκαστον in *Metaphysics* 1031 B 18-20), instead of refuting the existence of separate ideas, really requires that the "thing itself" be distinguished from the particular concretion which at first sight seems to be the individual (cf. *Metaphysics* 1036 A 16-17, εἰ . . . ἐστι . . . ἕκαστον ἢ ἑκάστου [*scil.* ψυχή] and see note 246 *supra*).

In the second place, this doctrine of essence itself reveals the weakness of Aristotle's contention that there could in any case be ideas answering only to the terms which fall within his *category* of substance (see pages 305-306, 314 *supra*). Early in his investigation of essence he had restricted esssence to those things of which the formula is a definition and definition in the proper sense to what is "primary"; "primary" he had defined as that which does not involve one thing's being predicated of another, a definition which was then said to restrict essence to the "species of genera" because only they signify neither something qualified in a certain way by participating in something other than itself nor that which is an accident of something else [264] "Accidental combinations" like "white man"

[264] *Metaphysics* 1030 A 6-14 ὥστε τὸ τί ἦν εἶναι ἐστιν ὅσων ὁ λόγος ἐστὶν ὁρισμός ὁρισμὸς δ' ἐστὶν . . . ἐὰν πρώτου τινὸς ᾖ τοιαῦτα δ' ἐστὶν ὅσα λέγεται μὴ τῷ ἄλλο κατ' ἄλλου λέγεσθαι οὐκ ἔσται ἄρα οὐδενὶ τῶν μὴ γένους εἰδῶν ὑπάρχον τὸ τί ἦν εἶναι, ἀλλὰ τούτοις μόνον· ταῦτα γὰρ δοκεῖ οὐ κατὰ μετοχὴν λέγεσθαι καὶ πάθος οὐδ' ὡς συμβεβηκός (cf 1037 B 3-4· λέγω δὲ πρώτην ἢ μὴ λέγεται τῷ ἄλλο ἐν ἄλλῳ εἶναι καὶ ὑποκειμένῳ ὡς ὕλῃ). It is wrong to suppose, as some have done (e g Ross, *Metaphysics*, II, p 171), that in κατὰ μετοχήν, κατὰ πάθος, and ὡς συμβεβηκός there is no important distinction The words καὶ πάθος explain κατὰ μετοχὴν λέγεσθαι to mean that a species is not called what it is in virtue of some quality of which it partakes, while οὐδὲ ὡς συμβεβηκός (*scil.* λέγεσθαι) means that the species does not have significance merely as an

fall into the first of these two rejected classes (cf. 1030 A 3-6, see note 245 *supra*), it is in the second way that a term in the categories other than substance falls short of being primary, having essence only in a secondary and derivative sense because its unity like its existence is derived from its being a modification of a substrate other than itself (1030 B 3-13). Then "white," for example, must always imply "something which is white," and in any formula of "white" the notion of a substrate other than "white" would necessarily be involved (1031 A 1-11, 1045 B 29-32, cf. 1029 B 23-25, 1028 A 35-36). Yet even for these "accidental terms" Aristotle finally asserts the identity of essence and that of which it is the essence in the same way as he does for "substances," for he recognizes the ambiguity of such terms as τὸ λευκόν and consequently that "the white" with which the essence is identical is not "something white" but the "attribute itself" (1031 B 22-28 [pages 336-337 *supra*]). Since, however, all phenomenal white is "something white" (*Anal. Post.* 83 A 30-32, *Metaphysics* 1077 B 4-9), that with which the essence of white is identical ought to be other than the white that is always and only a modification of sensible substance. Aristotle's use of the word πάθος to designate that with which, as different from "something white," the essence is identical (1031 B 28) indicates that he is unaware of the difficulties which this distinction implies for his doctrine of categories (see note 246 *supra*); but, since he himself in his refutation of the ideas insists that any attribute implies a subject of which it is the attribute and since it was for this reason that the so-called non-substantials were supposed to be complexes rather than true units and so to have essence only derivatively, if now there is an essence of white which is *not* identical with "something white" just because this *does* involve a subject which is other than white, the "white" with which this essence is

attribute of something else (cf. Bessarion's translation, haec enim videntur non secundum participationem et passionem, nec ut accidens dici). For the former see *De Part. Animal.* 649 B 27 (ἢ δὲ κατὰ πάθος, τὸ αἷμα οὐ καθ' αὑτὸ θερμόν), cf. 649 A 19 (ἐν ὅσοις τὸ ὑποκείμενον κατὰ πάθος θερμόν ἐστιν) and [Alexander], *Metaph.*, p. 583, 35-36 (καὶ ὅσα μὲν οὕτω οἷον λευκὸν [ι. e. λεύκινον] ἢ μουσικὸν καὶ ὅλως ὡς τὰ κατὰ πάθος λέγεται . . [on *Metaphysics* 1049 A 30-B 1]), for the latter see especially *Anal. Post.* 83 B 20-24 (α συμβεβηκός ἐστι ὃ ἑτερόν τι ὂν λέγεται ὃ λέγεται).

identical must not imply a subject other than itself and so cannot be an "attribute" or "modification" at all [265] The case of the "non-substantials" identical with their essences is therefore the same as that of "substances," in which the exigencies of complete actuality and intelligibility lead ultimately to the identification of the essence not with the concrete particular but with a pure form distinguished from it. That with which the essence of white is identical is πρῶτον καὶ καθ' αὑτό in the same sense as anything which in the category of substance is identical with its essence (1032 A 4-6).

The same conclusion follows in the case of unity, the essence of which has been identified with each and every unity of entity and essence (1031 B 32-1032 A 4 [pages 336-337 and note 246 *supra*]), for, if unity is definable, its definition cannot coincide with that of any specific unit To contend that "one" is always "some one thing" is no different from arguing that "white" is always "something white"; if the essence of white is not identical with any "white thing," the essence of unity must be other than any "one something." On the other hand, does Aristotle not deny any real essence of unity? He explains "one" and "being" as correlative terms with various meanings, the widest of all common predicates, being predicated of every-

[265] Arpe asserts (*Das τί ἦν εἶναι bei Aristoteles*, p 36, n. 56) that the meaning which the 2nd to 10th categories have as πρῶτα and καθ' αὑτά is just that which they are seen to have when predicated of a subject, that it is just "die reale Unselbstandigkeit einer solchen Wesenheit" that this καθ' αὑτό emphasizes, and that consequently these "other" categories as καθ' αὑτά retain their character as predicates This interpretation fails to take account of the reason why in 1030 A 6-14 ὡς συμβεβηκὸς λεγόμενα are excluded from τὰ πρῶτα (see note 264 *supra*) It overlooks *Physics* 204 A 23-24, according to which it is only as μὴ καθ' ὑποκειμένου, i e as μὴ συμβεβηκός (cf 204 A 10) that anything can be identical with its essence, a passage to which Simplicius (*Phys*, p 473, 28-30) applies the example that τὸ λευκόν is other than τὸ λευκῷ εἶναι because τὰ συμβεβηκότα, since they are implicated in substrates, are not ἁπλᾶ Finally, it is contradicted by *Metaphysics* 1037 A 33-B 4 where Aristotle, although not asserting finally that καμπυλότης is πρῶτον and καθ' αὑτό, does make clear that *if* it is, as it must be to be identical with its essence, it is *not* λέγεται τῷ ἄλλο ἐν ἄλλῳ εἶναι καὶ ὑποκειμένῳ ὡς ὕλῃ Whatever, then, is identical with the essence of white is so as *not* being a predicate, for the predicate always involves a subject of inherence (cf [Alexander], *Metaph*, pp 472, 3-5, 479, 4-17, 517, 26-29).

thing in all the categories, each of which is itself directly one and existent without having "unity" or "being" as genera or separable from themselves severally (see pages 321-326 *supra*) For all that, he maintains that neither "one" nor "being" is a merely homonymous term; whatever is called one is so called with reference to the "primary one," as all the various predications of "being" have reference to a single primary meaning and a single primary nature from which all "beings" in the various senses depend and in virtue of which they receive this predication.[266] Whereas this kind of reasoning had been used as an argument for the existence of ideas,[267] Aristotle appears to believe that it does not require him to admit the existence of Unity or Being as a single and separate universal (cf *Metaphysics* 1005 A 6-11). Since the terms "one" and "being" are

[266] *Metaphysics* 1004 A 25-26 ἐπεὶ δὲ πάντα πρὸς τὸ πρῶτον ἀναφέρεται, οἷον ὅσα ἓν λέγεται πρὸς τὸ πρῶτον ἕν, . . . and 1003 A 33 B 17 τὸ δὲ ὂν λέγεται μὲν πολλαχῶς, ἀλλὰ πρὸς ἓν καὶ μίαν τινὰ φύσιν καὶ οὐχ ὁμωνύμως ἀλλ' ὥσπερ καὶ τὸ ὑγιεινὸν ἅπαν πρὸς ὑγίειαν, . οὕτω δὲ καὶ τὸ ὂν λέγεται πολλαχῶς μὲν ἀλλ' ἅπαν πρὸς μίαν ἀρχήν· . . καθάπερ οὖν καὶ τῶν ὑγιεινῶν ἁπάντων μία ἐπιστήμη ἐστιν, ὁμοίως τοῦτο καὶ ἐπὶ τῶν ἄλλων. οὐ γὰρ μόνον τῶν καθ' ἓν λεγομένων ἐπιστήμης ἐστὶ θεωρῆσαι μιᾶς ἀλλὰ καὶ τῶν πρὸς μίαν λεγομένων φύσιν· καὶ γὰρ ταῦτα τρόπον τινὰ λέγονται καθ' ἕν δῆλον οὖν ὅτι καὶ τὰ ὄντα μιᾶς θεωρῆσαι ἢ ὄντα πανταχοῦ δὲ κυρίως τοῦ πρώτου ἡ ἐπιστήμη, καὶ ἐξ οὗ τὰ ἄλλα ἤρτηται καὶ δι' ὃ λέγονται For other references to this class (τὰ ἀφ' ἑνός τε καὶ πρὸς ἕν [cf *Eth. Nic* 1096 B 27-28; Alexander, *Metaph.*, p. 241, 3-21] or παρώνυμα [*Categories* 1 A 12-15]) intermediate between ὁμώνυμα and συνώνυμα see the passages in *Index Arist*, Alexander, and Robin cited in note 102 (pages 178-179) *supra*

[267] For the idea as that πρὸς ὃ τὰ ἐνθάδε ὡς εἰκόνες γίνεταί τε καὶ λέγεται cf Alexander, *Metaph*, p 83, 14-17 (see page 230, note 137, and note 186 *supra*); for all phenomena as πρός τι, i e τὰ πρὸς τὰ εἴδη, see note 191 *supra* and for the ideas as πρῶτα τῶν πρὸς αὐτὰ ὄντων or each idea as πρώτη τῶν συνωνύμων note 197 *supra* This is the course of reasoning represented in *Lysis* 219 C-220 B ἆρ' οὖν οὐκ ἀνάγκη ἀπεῖπεῖν ἡμᾶς οὕτως λόντας ἢ ἀφικέσθαι ἐπί τινα ἀρχήν, ἣ οὐκέτ' ἐπανοίσει ἐπ' ἄλλο φίλον, ἀλλ' ἥξει ἐπ' ἐκεῖνο ὃ ἔστιν πρῶτον φίλον, οὗ ἕνεκα καὶ τὰ ἄλλα φαμὲν πάντα φίλα εἶναι; ἀνάγκη. τοῦτο δή ἐστιν ὃ λέγω, μὴ ἡμᾶς τἆλλα πάντα ἃ εἴπομεν ἐκείνου ἕνεκα φίλα εἶναι, ὥσπερ εἴδωλα ὄντα ὄντα αὐτοῦ, ἐξαπατᾷ, ᾗ δ' ἐκεῖνο τὸ πρῶτον, ὃ ὡς ἀληθῶς ἔστι φίλον. . ὅσα γάρ φαμεν φίλα εἶναι ἡμῖν ἕνεκα φίλου τινὸς ἑτέρου, ῥήματι φαινόμεθα λέγοντες αὐτὰ φίλον δὲ τῷ ὄντι κινδυνεύει ἐκεῖνο αὐτὸ εἶναι εἰς ὃ πᾶσαι αὗται αἱ λεγόμεναι φιλίαι τελευτῶσιν. Asclepius regularly explains the relation between the phenomena and the idea to be that of ἀφ' ἑνὸς καὶ πρὸς ἕν (*Metaph*, pp. 71, 10-22, 82, 28-83, 2; 119, 8-12).

reciprocal, the primary being and primary unity must be merely different aspects of the same "primary nature" (1003 B 22-25; cf. Alexander, *Metaph.*, p. 247, 9-24). What, then, is this "primary nature" by reference to which all things called one are one and all modes of existence are existent? Aristotle doubtlessly believes that the sufficient term of reference for the unity and being of the secondary categories is "being" in the sense of the first category, substance, the categories being a series of terms prior and posterior one to another and so constituting a special kind of *πρὸς ἕν* term and one for which, he maintains, there can be no single idea even according to the principles of those who posit ideas.[268] Nevertheless, the "primary being" to which all being *qua* being is referred is not the category of substance in the sense of the class of all physical substances.

[268] In *Metaphysics* 1003 B 17-19, after having shown that the many senses of "being" all have reference to a single nature, that it is therefore the task of a single science to study *τὰ ὄντα ᾗ ὄντα*, and that science always deals with the *primary* (1003 A 33-B 17, note 266 *supra*), Aristotle proceeds *εἰ οὖν τοῦτ' ἐστὶν ἡ οὐσία, τῶν οὐσιῶν ἂν δέοι τὰς ἀρχὰς καὶ τὰς αἰτίας ἔχειν τὸν φιλόσοφον*. The word *οὐσία* is, of course, ambiguous, meaning strictly only "being"; but the following *τῶν οὐσιῶν* shows that Aristotle takes it in the sense of the category "substance" (cf. Alexander, *Metaph.*, p. 242, 10-12. *ὂν γὰρ λέγεται κυρίως μὲν ἡ οὐσία, λέγεται δέ γε ὄντα καὶ τὰ τῇ οὐσίᾳ συμβεβηκότα ἃ ἐστι τὰ ἴνδεα γένη* and *Metaphysics* 1028 A 10-31, 1045 B 27-32). For the relation of prior and posterior among the secondary categories cf. *Metaphysics* 1088 A 22-24 (*τὸ δὲ πρός τι πάντων ἥκιστα φύσει τις ἡ οὐσία τῶν κατηγοριῶν ἐστί, καὶ ὑστέρα τοῦ ποιοῦ καὶ ποσοῦ*) and 1069 A 19-21 (*εἰ ὡς ὅλον τι τὸ πᾶν, ἡ οὐσία πρῶτον μέρος καὶ εἰ τῷ ἐφεξῆς, κἂν οὕτω πρῶτον ἡ οὐσία, εἶτα τὸ ποιόν, εἶτα τὸ ποσόν*), which last passage explains the distinction made in 1005 A 10-11 where, speaking of "one" and "being" as having various meanings but with a primary reference, Aristotle says *τὰ μὲν πρὸς ἓν τὰ δὲ τῷ ἐφεξῆς*. It has already been observed that the Platonic principle, according to which there is no separate idea of the number series apart from that series itself, was extended by Aristotle to mean that wherever there is *πρότερον καὶ ὕστερον* in *any* sense there can be no separate idea and that in *Eth. Nic.* 1096 A 17-23 he uses this to prove that there can be no idea of good, contending that "good" is predicated in the various categories and that these are prior and posterior one to another (see Appendix VI *infra*). Then "being" too, as appearing in all the categories, is a term in which prior and posterior are to be distinguished, although it belongs in the class of *πρὸς ἕν* also. Consequently, terms which are *ἐφεξῆς* must be a species of *πρὸς ἕν*, having not only a single term of reference as have the latter but at the same time constituting a consecutive series among themselves (cf. Robin, *Idées et Nombres*, note 172 V [pp. 169-170] and see note 270 *infra*).

If it were, Aristotle says, physics would be first philosophy, which is not the case; these substances, too, have being by reference to a primary being which is substance apart from the natural complexes and is universal as primary. With this as its object philosophy can study being *qua* being because all beings are being in reference to this *πρῶτον ὂν καὶ πρῶτον ἕν*.[269] Such too

[269] *Metaphysics* 1026 A 23 32 *ἀπορήσειε γὰρ ἄν τις πότερόν ποθ' ἡ πρώτη φιλοσοφία καθόλου ἐστὶν ἢ περί τι γένος καὶ φύσιν τινὰ μίαν (οὐ γὰρ ὁ αὐτὸς τρόπος οὐδ' ἐν ταῖς μαθηματικαῖς, ἀλλ' ἡ μὲν γεωμετρία καὶ ἀστρολογία περί τινα φύσιν εἰσίν, ἡ δὲ καθόλου πασῶν κοινή)· εἰ μὲν οὖν μὴ ἔστι τις ἑτέρα οὐσία παρὰ τὰς φύσει συνεστηκυίας, ἡ φυσικὴ ἂν εἴη πρώτη ἐπιστήμη· εἰ δ' ἔστι τις οὐσία ἀκίνητος, αὕτη προτέρα καὶ φιλοσοφία πρώτη, καὶ καθόλου οὕτως ὅτι πρώτη καὶ περὶ τοῦ ὄντος ᾗ ὄν ταύτης ἂν εἴη θεωρῆσαι, καὶ τί ἐστι καὶ τὰ ὑπάρχοντα ᾗ ὄν* Cf. 1064 B 6 14 *ἀπορήσειε δ' ἄν τις πότερόν ποτε τὴν τοῦ ὄντος ᾗ ὄν ἐπιστήμην καθόλου δεῖ θεῖναι ἢ οὔ. τῶν μὲν γὰρ μαθηματικῶν ἑκάστη περὶ ἕν τι γένος ἀφωρισμένον ἐστίν, ἡ δὲ καθόλου κοινὴ περὶ πάντων· εἰ μὲν οὖν αἱ φυσικαὶ οὐσίαι πρῶταί τῶν ὄντων εἰσί, κἂν ἡ φυσικὴ πρώτη τῶν ἐπιστημῶν εἴη· εἰ δ' ἔστιν ἑτέρα φύσις καὶ οὐσία χωριστὴ καὶ ἀκίνητος, ἑτέραν ἀνάγκη καὶ τὴν ἐπιστήμην αὐτῆς εἶναι καὶ προτέραν τῆς φυσικῆς καὶ καθόλου τῷ προτέραν.* (See note 259 *supra*)

Metaphysics E begins (1025 B 3-10) by saying that *αἱ ἀρχαὶ καὶ τὰ αἴτια ζητεῖται τῶν ὄντων, δῆλον δὲ ὅτι ᾗ ὄντα* but that all the special sciences *περὶ ὄν τι καὶ γένος τι περιγραψάμεναι περὶ τούτου πραγματεύονται ἀλλ' οὐχὶ περὶ ὄντος ἁπλῶς οὐδὲ ᾗ ὄν* One would then expect first philosophy *not* to have as its object *ὄν τι καὶ γένος τι* but just *ὂν ᾗ ὄν*, and yet later in the same chapter (1026 A 10 23) it is called *θεολογική* the object of which is *τὸ τιμιώτατον γένος*, the eternal existence which is separate and immobile This apparent contradiction is then resolved in 1026 A 23 32 quoted above According to Jaeger, however, that passage is a later gloss added by Aristotle who himself observed the contradiction, a gloss, moreover, which only makes the contradiction more evident The two determinations of metaphysics, as the study of transcendental being and as the universal science of all being as such, Jaeger maintains are incompatible and cannot have been the result of a single train of thought, the notion of metaphysics as theology is the older and more Platonic view of Aristotle, while that of a science of being *qua* being represents the last and most characteristic stage of his thought (*Aristoteles*, pp 223-228). Yet exactly the same "contradiction" and solution appear in *Metaphysics* K, chap. 7 (cf. 1063 B 36-1064 A 4, 1064 A 33-B 6, 1064 B 6 14 with the passages of E cited above), since Jaeger supposes K to be earlier than E, he ought to hold that the solution did not first occur to Aristotle when he wrote E or later but had been evolved by him earlier and at the time of the writing of E still seemed to him to be valid, in short that there at least it is no mere "Randglosse." There is no need, however, to argue the relative chronology of these two passages, for the two "incompatible" determinations of first philosophy occur side by side even in *Metaphysics* Γ, of which book Jaeger says (*op. cit.*, pp. 223-224) "Dort is noch eingehender und klarer der Charakter der ersten Philosophie als Allgemein-

is the case of the term "good." Predicated in all the categories, it is a πολλαχῶς λεγόμενον correlative with "being"; but then the various senses of "good" should imply a "primary good" coinciding with the "primary being" and the "primary one." It is true that where this predication of good in all the categories is used as a refutation of the idea of good Aristotle, while denying that good is a merely homonymous term, postpones the decision as to whether it is ἀφ' ἑνός or πρὸς ἕν or rather κατ' ἀναλογίαν, although shortly thereafter he himself sets up a single, perfect "practical" good, happiness (εὐδαιμονία) in reference to which all other practical goods are good.[270] At any rate,

wissenschaft dem der Spezialwissenschaften und das Seiende als solche den Einzelgebieten des Seins gegenüberstellt Das Seiende wird hier nicht als ein von anderen Objekten gewissermassen getrenntes und unterschiedenes Objekt gefasst, sondern als der gemeinsame Beziehungspunkt fur alle mit dem Realitatsproblem zusammenhangende Zustande, Eigenschaften, und Begriffsverhaltnisse." In chap 3 of this book, where there is frequent reference to the object of the philosopher's study as τὰ ὄντα ᾗ ὄντα (cf 1005 A 21-29, 1005 B 5-11), Aristotle can still say ἐπεὶ δ' ἔστιν ἔτι τοῦ φυσικοῦ τις ἀνωτέρω (ἐν γάρ τι γένος τοῦ ὄντος ἡ φύσις), τοῦ καθόλου καὶ τοῦ περὶ τὴν πρώτην οὐσίαν θεωρητικοῦ καὶ ἡ περὶ τούτων ἂν εἴη σκέψις· ἔστι δὲ σοφία τις καὶ ἡ φυσική, ἀλλ' οὐ πρώτη (1005 A 33-B 2, cf. Alexander, *Metaph*, pp. 265, 33-266, 14, cf also *Metaphysics* 1004 A 2-9 and Alexander, *Metaph*, p. 251, 34 38) If the object of metaphysics is τὰ ὄντα ᾗ ὄντα and all beings are being πρὸς ἓν καὶ μίαν φύσιν, it is clear that metaphysics must study the πρῶτον ὄν on which all beings *qua* being depend (cf 1003 B 15-17 and Alexander, *Metaph*, pp 244, 10-20 and 266, 10-14) The notion that the object of metaphysics is transcendental being is not an outworn phase of Aristotle's "development" but the logical consequence of the notion of τὰ πρὸς ἓν καὶ ἀφ' ἑνός, which, in turn, is the basis of Aristotle's defense of a single science of being *qua* being

It is noteworthy that in the *Eudemian Ethics* (1236 A 15-30) where the three kinds of friendship are explained as πρὸς μίαν τινὰ καὶ πρώτην, the objection is made that διὰ τὸ καθόλου εἶναι πρῶτον λαμβάνουσι καὶ τὸ πρῶτον καθόλου· τοῦτο δ' ἐστὶ ψεῦδος. The reference is undoubtedly to Platonists (cf *Lysis* 219 C-220 B [note 267 *supra*] or perhaps rather *Clitopho* 409 D-E [cf. R Walzer, *Magna Moralia und Aristotelische Ethik*, pp 201-5]), but the point of interest is that this argument contradicts the doctrine of the *Metaphysics* just as does the conclusion drawn in *Eth Eud* 1217 B 34-35 that there is no single science of being (see note 143 *supra*)

[270] After having argued that the good, being predicated in all the categories, constitutes a series comprising prior and posterior of which according to the canon of the Platonists themselves there can be no single idea (*Eth Nic.* 1096 A 17-23, see note 268 *supra* and Appendix VI *infra*), Aristotle gives the more

"actuality" too is explained by "analogy" (*Metaphysics* 1048 A 35-B 9), and yet ultimately each of all the analogous actualities is as actuality referred to a prior actuality until the single complete and absolute actuality of the prime mover is reached (1050 B 3-6). Elsewhere this prime mover is expressly called the primary good (*De Motu Animal.* 700 B 32-35, in which chapter 700 B 6-9 refers to *Metaphysics* Λ; cf. Jaeger, *Hermes*, XLVIII [1913], pp. 33 ff.); and the actuality of the prime

general argument that since τἀγαθὸν ἰσαχῶς λέγεται τῷ ὄντι it cannot be a single thing, for if it were it would be predicated in only one category and not in all (*Eth Nic.* 1096 A 23-29, see note 226 *supra*) The former argument regards the categories of "being" or "good" as ἐφεξῆς, the latter takes them simply as *different* and here might seem to imply that "good" is an homonymous term (cf *Topics* 107 A 3-12 and the passages cited in note 226 *supra*) Shortly thereafter (*Eth Nic.* 1096 B 8 26) Aristotle undertakes to prove that "good" is not κοινόν τι κατὰ μίαν ἰδέαν, i e that it is not a common predicate answering to a single idea because in his own language the various "goods" are not καθ' ἓν λεγόμενα, synonyms In this proof he makes use of the Platonic distinction between things pursued for their own sake and those which are called good because they are somehow instrumental to goods of the former class (cf. *Republic* 357 B C, 367 C-D), a distinction which, he says, shows that things are called good in two senses Disregarding the instrumental goods which are derivative, he then asks what one would call ἀγαθὰ καθ' αὑτά. If only the idea of good, the class of *per se* goods is an empty name, if such things as honor, wisdom, vision, certain pleasures are also good *per se*, the definition of good should be identical in all of them, whereas just *qua* goods all these things have different definitions. Nevertheless, he continues (1096 B 26-31) "good" is not an accidental homonym; and he asks whether it is applied in the various cases τῷ ἀφ' ἑνὸς εἶναι ἢ πρὸς ἓν ἅπαντα συντελεῖν, ἢ μᾶλλον κατ' ἀναλογίαν. The μᾶλλον and the explanatory sentence which follows (ὡς γὰρ ἐν σώματι ὄψις, ἐν ψυχῇ νοῦς, καὶ ἄλλο δὴ ἐν ἄλλῳ) give the impression that at any rate here he inclines to analogy as the correct answer; but he says at once that an exact determination of the problem is more appropriate to "another philosophy," and this can be nothing but metaphysics. Though the question is not there answered with explicit reference to the "good," the solution for "being" should hold for "good" as well since "good" and "being" are here correlated; and in commenting on the *Metaphysics* both Alexander (*Metaph*, p. 242, 5-6) and Syrianus (*Metaph*, p 56, 24-26) do mention "good" along with "being" as examples of τὰ πρὸς ἓν καὶ ἀφ' ἑνός. In 1097 A 15-B 21 Aristotle shows that εὐδαιμονία is τῶν πρακτῶν τέλος; it alone is τὸ καθ' αὑτὸ αἱρετόν (1097 A 30-B 6) and so alone strictly ἀγαθὸν καθ' αὑτό (1094 A 18-22) Cf. Stewart's remark on this section (*Notes on the Nicomachean Ethics*, I, p 96) "In this section Aristotle virtually maintains all that Plato contended for in his doctrine of the Idea of Good."

mover is perfect happiness, the absolute good of which man as a complex of form and matter can only imperfectly partake (cf. *Eth. Nic.* 1177 A 12-1178 A 8, 1178 B 21-32 and *Metaphysics* 1072 A 35-B 30, 1074 B 15-1075 A 10; also *Politics* 1323 B 23-27 and *Eth. Eud.* 1245 B 16-19) The perfect practical good of man to which all other human goods are referred is thus itself good in reference to the absolute good. The relation of all goods in the world to this primary and separate good is described in the same way as that of all existents to the μία φύσις by reference to which they *are* and on the being of which their being depends; the various predications of being, unity, and good thus require the assumption of a primary being, unity, and good which Aristotle takes to be only different aspects of a primary and separate substance.[271] This is pure essence, a fully actual, fully determinate individual just because it is *not* a materialized particular, fully substantial just because it is *not* the substrate of any predicates which can be abstracted from it, and universal without being predicated of a subject or inhering in a substrate because it is the principle on which the multiple

[271] In *Metaphysics* 1075 A 11-25 the immanent good of the world is said to depend upon the highest good which is κεχωρισμένον τι καὶ αὐτὸ καθ' αὑτό (i e the unmoved mover, cf. 1073 A 3-5) as the good of an army which is its order depends upon its general; all things in the world πρὸς ἓν συντέτακται. So in 1072 B 10-14, the prime mover having been shown to be the first principle in the sense of the good, Aristotle concludes ἐκ τοιαύτης ἄρα ἀρχῆς ἤρτηται ὁ οὐρανὸς καὶ ἡ φύσις (cf. [Alexander], *Metaph*, p 696, 28 31), even as in 1003 B 12-17 the object of the science which studies τὰ ὄντα ᾗ ὄντα is that primary entity ἐξ οὗ τὰ ἄλλα ἤρτηται καὶ δι' ὃ λέγονται. The prime mover, then, is the single entity in reference to which all beings are being, all units one, all goods good He is οὐσία in the strictest sense; but he certainly should not be included in the same category as the φυσικαὶ οὐσίαι (cf *Metaphysics* 1042 A 7-11, *De Caelo* 298 B 3-4)—although in *Eth. Nic* 1096 A 24-25 θεός and νοῦς are put into the category of substance—for none of these is more substance than any other (*Categ* 2 B 26-28) and all of them and φύσις itself, which is ἕν τι γένος τοῦ ὄντος (*Metaphysics* 1005 A 34), depend for their being upon this primary being which is an ἀρχὴ οὐ φυσική (cf. *Physics* 198 A 35-B 4, *Metaphysics* 1069 A 36-B 2, 1071 B 3-5). Conversely, that good, being, unity cannot be restricted to any one category is no argument against the unity of each, this very variety of application indicates for Aristotle that the point of reference is a single entity. Moreover, his own argument (note 270 *supra*) proves, as Natorp says (*Platos Ideenlehre*, p 431), not that the "predicate" but that the subjects of the predicate fall into different categories

particulars depend for such existence, unity, and goodness as they have [272] In short, Aristotle's perfect substance exhibits the very characteristics which he contends prevent the ideas from being substantial entities.

To be sure, Aristotle's arguments against the substantiality of the ideas are not to be refuted by a mere "tu quoque," for his criticism might be valid even though in his own constructive system he could not himself avoid what in the theory of the Platonists he had shown to be an error. Nevertheless, if οὐσία is to be used as a canon by which to measure the ideas, the canon itself and its application should be unequivocal Now, at times we are told that the "primary reality"—for "reality" represents οὐσία more exactly than the conventional "substance"—is the particular (*Categ.* 2 A 11-14, *De Gen. Animal.* 731 B 34, 767 B 32-34) and that the species is more real than the genus because it is nearer to the particular (*Categ.* 2 B 7-8, cf. *De Gen. Animal.* 767 B 30-32) but at other times that it is the form (*Metaphysics* 1032 B 1-2, 1037 A 27-30 and B 3-4),[273] the particular complex of form and matter being more real than matter because it is nearer to the form (*Metaphysics* 1084 B 9-13, cf. 1029 A 29-32 with 1029 A 5-7). With these two conceptions of reality correspond the two meanings of οὐσία given in *Metaphysics* 1017 B 23-26· 1) τὸ ὑποκείμενον ἔσχατον ὃ μηκέτι κατ' ἄλλου λέγεται and 2) ὃ ἂν τόδε τι ὂν καὶ χωριστὸν ᾖ, for the second is here said to apply to the essential form (1017 B 25-26 and 21-22) and the first to sensible particulars (1017 B 10-14) which in the *Categories* too are considered "primary reality" just because they are neither predicated of a subject nor present in a substrate but are the subject or substrate of everything else (2 A 11-14, 2 A 34-B 6, 2 B 37-3 A 1, 3 A 8-9) From this latter point of view the priority of οὐσία is the priority of subject or substrate (*Metaphysics* 1019 A 5-6) and the subject as prior must be the

[272] Cf *Metaphysics* 1074 A 35-37, 1072 A 25-32 (and note Mure, *Aristotle*, p 188, n 1); 1026 A 29-32. On this primary substance as an "idea" and as a "living being" see note 406 *infra*

[273] Cf also *Metaphysics* 1054 B 1 where ἡ πρώτη οὐσία is form or essence, and cf the πρῶται οὐσίαι of *De Interpretatione* 23 A 23-26, distinguished as pure actuality from the concrete sensibles, and the πρώτη οὐσία of *Metaphysics* 1005 A 35

principle of whatever is predicated of it (*Physics* 189 A 30-32). On the other hand, no subject or substrate *as such* can be real in the sense of being τόδε τι καὶ χωριστόν, for, if from any subject or substrate all the predicates or attributes other than it be abstracted, what remains is just "matter" which is completely characterless, indeterminate, and indistinct and of which οὐσία itself is a predicate (*Metaphysics* 1028 B 36-1029 A 30; see pages 152-153 *supra*). According to this conception the particular is what results when the actuality or determinate form is predicated of indeterminate matter (1043 A 5-7, 1049 A 34-36, 1038 B 6; cf. 995 B 35, 999 A 32-33) and the form, though predicated of a substrate, is more real than the particular for the same reason that it is more real than indeterminate matter. This analysis, from which it follows not only that the two meanings of οὐσία, as ὑποκείμενον and as τόδε τι καὶ χωριστόν, are incompatible but also that the particular cannot be primary reality in either sense, is the first step in Aristotle's attempt to discover the nature of reality itself, a necessary preliminary to the determination of what things are real.[274] His method, however, is to accept the sensible particulars as somehow real and by analysis to seek out that which makes them real;[275]

[274] *Metaphysics* 1028 B 27-32 At the beginning of Book Z the particular, the primary reality of the *Categories*, is as the substrate of attributes made the cause of their being and from this it is concluded that οὐσία is that which *is* primarily, i e unqualified being (1028 A 25-31) Then in chap 3 the analysis shows that οὐσία itself is predicated of a substrate and that *this* is unqualified being (1029 A 20-26)

[275] In 1028 B 33-36 essence, universal, genus, and substrate are the four *prima facie* meanings of οὐσία because these are the four things that have been taken to be the οὐσία ἑκάστου Cf also 1029 A 33-34 and 1037 A 10-17 Jaeger holds that both these passages (i e 1029 A 33-B 12 and 1037 A 10-20) are later additions made by Aristotle when he inserted Books Z H Θ, originally an independent work on 'substance," into their present position in the *Metaphysics* (*Aristoteles*, pp 205, n 1 and 206, n 1), Jaeger's treatment of these passages is required by his thesis that these books were in character and purpose originally physics and do not in fact treat the investigation of sensible being as merely preparatory The two passages thus eliminated by Jaeger are not, however, the only indications in Z H Θ that the study of sensible being is merely a method of determining the nature of reality itself and so of settling the question of suprasensible being It is clearly stated in Z, chap 2 (cf. especially 1028 B 13-15 and 27-32) and in 1041 A 6-10 where a "fresh start" is made, in 1042 A 4 6

this when found will be reality since it is the cause of the being of particular reals (cf. 1041 A 27-28, 1041 B 4-9 and B 25-31).

Now, it is clear that οὐσία must be used in a different sense of the particular reals and of the principle of their reality, if this principle is to be called οὐσία too and at the same time distinguished from particularity. Aristotle, however, takes no account of this necessity, and his confusion of the two meanings [276] is reflected in the fact that even after having contrasted the meanings of οὐσία as ὑποκείμενον and as τόδε τι καὶ χωριστόν he seems to imply that true reality will answer to *both* at once. At any rate, matter, form, and the complex are all referred to as ὑποκείμενα (*Metaphysics* 1029 A 1-5, 1042 A 26-29), in view of which one of them might be expected to satisfy both conditions; but in that case ὑποκείμενον too would have to have a meaning other than what it has in the case of matter, for to whatever is ὑποκείμενον in *that* sense the second meaning of οὐσία cannot apply.[277] This second meaning itself, however, presents

the object of the investigation is said to be τῶν οὐσιῶν τὰ αἴτια καὶ αἱ ἀρχαὶ καὶ τὰ στοιχεῖα (cf. the beginning of Λ, 1069 A 18-19), in 1042 A 6-11 and 24-25 the sensible particulars as ὁμολογούμεναι οὐσίαι are referred to as the starting point of the inquiry, in 1041 A 2-3, 1042 A 31, 1050 B 4-6 suprasensible being is affirmed. All these passages cannot be "later additions." If they are not, there is no reason for supposing that the two mentioned by Jaeger are (on 1029 A 33-B 12 cf. Arpe, *Das τί ἦν εἶναι bei Aristoteles*, pp. 31-32); but even if they were it would mean that Aristotle altered his "later" theory of οὐσία to make it fit his "earlier" writing instead of changing the earlier theory to fit the later, a procedure which hardly conforms to Jaeger's notion of his "development."

[276] E. g. *Metaphysics* 1028 A 36-B 2 (cf. Ross *ad loc.*), 996 B 13-18 (where οὐσία [14] is used for the formal cause and then taken up by τί ἐστι [17] which designates the first category), 1030 A 3-6, 1030 A 17-B 6 (cf. C. Arpe, *Das τί ἦν εἶναι bei Aristoteles*, pp. 37 and 39-40, Cousin, *Mind*, N. S. XLIV [1935], pp. 170-172).

[277] Otherwise there is no cogency to the argument that matter is not οὐσία. How the complex would be ὑποκείμενον in a sense other than matter Aristotle does not say, his proof of the existence of matter in *Metaphysics* 1042 A 32-B 3 is based on the necessity for an ὑποκείμενον which has the character that in *Categories* 4 A 10-B 18 is called the most distinctive mark of οὐσία (i. e. "particulars" in that work), namely the admission of contrary qualifications by an entity which remains itself though changing with the qualifications (cf. *Metaphysics* 1069 B 3-9 and *Physics* 211 B 31-33). That the form should be called ὑποκείμενον at all seems so strange that the statement in 1029 A 1-5 was

a similar difficulty It is as τόδε τι καὶ χωριστόν that the form is declared to be more real than the complex of form and matter and prior to it Yet elsewhere (1042 A 26-31) the latter is distinguished as χωριστὸν ἁπλῶς from the form which is τῷ λόγῳ χωριστόν, though it is still the form that is designated τόδε τι, the characteristic which above had been coupled with χωριστόν. Since this is one of the passages in which matter, form, and the complex are all called ὑποκείμενα, that cannot be the factor which here makes the complex χωριστὸν ἁπλῶς, and yet Aristotle does at times contend that it is because οὐσία is the subject of which everything else is predicated that it *alone* is χωριστόν,[278] although the analysis of the *Metaphysics* shows that that of which everything else is predicated cannot be οὐσία just because it cannot be χωριστόν. It is the unique capacity of the particular complex for generation and destruction which in 1042 A 26-31 is coupled with its being χωριστὸν ἁπλῶς, but this sense of χωριστόν cannot be determined by that capacity, since Aristotle immediately adds that *some* forms also are χωρισταὶ ἁπλῶς.[279] To judge by

explained by Bonitz as an oversight on Aristotle's part (*Metaphysica*, p 301) and that in 1042 A 26-29 was emended away by Christ (in b Pseudo-Alexander's reading here, τὰ ὑποκείμενα, which he took to mean τὰ προκείμενα [*Metaph.*, p 545, 27]), but cf Ross, *Metaphysics*, II, pp 164-5 In *Metaphysics* 1038 B 4-6, however, Aristotle remarks that he has already mentioned the *two* ways in which there is a subject, ἢ τόδε τι ὄν, ὥσπερ τὸ ζῷον τοῖς πάθεσιν, ἢ ὡς ἡ ὕλη τῇ ἐντελεχείᾳ, where τὸ ζῷον means the particular as is shown by the similar treatment in 1049 A 27-36 In the latter passage the form is not considered subject in either sense mentioned but as τόδε τι is said to be predicated of matter; we have already seen how Aristotle proves that one of two elements is *not* form by showing that it is not καθ' ὑποκειμένου but ὑποκείμενον (see note 239 *supra*)

[278] At the beginning of *Metaphysics* Z (1028 A 32-34) it is said that οὐσία is primary because it alone is χωριστόν, Aristotle having just previously contended that it is the substrate of attributes (see note 274 *supra*). Cf *Physics* 185 A 31-32 οὐθὲν γὰρ τῶν ἄλλων χωριστόν ἐστι παρὰ τὴν οὐσίαν πάντα γὰρ καθ' ὑποκειμένου λέγεται τῆς οὐσίας

[279] In *Metaphysics* 1002 A 28-B 11 Aristotle, saying that if οὐσία now is, having previously not been, or is not, after having previously been, it must undergo this change μετὰ τοῦ γίγνεσθαι καὶ φθείρεσθαι, argues that points, lines, and the planes cannot be οὐσίαι because without going through the processes of becoming and perishing they now exist and again do not (cf also 1060 B 17-19) Yet he himself, considering the formal cause as coexistent with that of which it is the cause (see note 238 *supra*), says that the forms are and are not without being generated or destroyed (*Metaphysics* 1039 B 20-27, 1044 B 21-29, 1070 A 15-17);

the term with which χωριστὸν λόγῳ is customarily contrasted, χωριστὸν ἁπλῶς should be equivalent to χωριστὸν τόπῳ or μεγέθει, but, place being peculiar to particulars so that only they are locally distinct, how can *any* form be χωριστὸν ἁπλῶς? On the other hand, if χωριστόν is a mark of reality, the primary essence, being in the strictest sense reality, must be χωριστόν in the strictest sense; but, then, since it is immaterial and without magnitude, the local separateness characteristic of particulars cannot be the strict sense of χωριστόν which is supposed to mark true reality [280] At any rate, if there is anything apart from particulars, it is, being apart from matter, χωριστόν in a sense different from that in which this term is applicable to them, for it is as materiate that they are "separate." Aristotle, however, pays no attention to this necessary distinction; but, assuming that the οὐσία separate from sensibles will be *another* separate οὐσία, he makes the separation of immaterial and sensible reality equivalent to the separateness of sensible particulars themselves and insists that by definition οὐσία must be χωριστόν in the way that the particulars are said to be so [281]

in 1033 B 5-8 he says simply that the form or essence is not subject to γένεσις and in 1043 B 14-18 that οὐσία itself is either eternal or at least exempt from the processes of destruction and generation In 1033 A 24-31 there is the alternative suggestion that form or essence is generated only κατὰ συμβεβηκός (see note 256 *supra*), elsewhere the forms are simply called eternal and fully actual (1047 A 2, cf 1051 B 26-32)

[280] For the contrast χωριστὸν λόγῳ ἢ τόπῳ (μεγέθει) *De Anima* 413 B 14-15, 429 A 11-12, 432 A 20; *De Generatione* 320 B 24 (cf 320 B 12-14), *Eth. Nic.* 1102 A 28-31; cf also *Physics* 193 B 4-5 (οὐ χωριστὸν δν ἀλλ' ἢ κατὰ τὸν λόγον) and *Metaphysics* 1048 B 14-15 (οὐχ οὕτω δυνάμει ὡς ἐνεργείᾳ ἐσόμενον χωριστόν, ἀλλὰ γνώσει) As for local separateness, ὁ τόπος τῶν καθ' ἕκαστον ἴδιος, διὸ χωριστὰ τόπῳ (*Metaphysics* 1092 A 18-19) For the primary reality as χωριστὸν cf *Metaphysics* 1026 A 16, 1064 A 35, 1064 B 11-12, 1075 A 11-15 (cf. *Physics* 194 B 14-15), as immaterial, 1074 A 35-37; as without magnitude, 1073 A 5-7, 1073 A 36-B 1, cf also *De Caelo* 279 A 18 22 (οὔτ' ἐν τόπῳ τάκεῖ πέφυκεν, οὔτε χρόνος αὐτὰ ποιεῖ γηράσκειν, κτλ), *Physics* 221 B 3-5

[281] Cf *Metaphysics* 1086 B 16-19 (page 318 *supra* and Appendix II *sub fin*) For the primary reality as separate *from particulars* cf 1041 A 8-9 (κεχωρισμένη τῶν αἰσθητῶν οὐσιῶν), 1060 A 19 (εἰ δὲ μὴ χωριστὴ τῶν σωμάτων ἡ ζητουμένη νῦν ἐστὶν ἀρχή . .); for the implication that it would be *another* separate reality besides the separate particulars cf 1028 B 30-31 (πότερον ἔστι τις χωριστὴ οὐσία . . ἢ οὐδεμία παρὰ τὰς αἰσθητάς), 1060 A 7-10, 1059 B 13-14 (where the αἰσθηταὶ οὐσίαι, though not the object of the science under discussion, share

If, then, separateness in this sense is the criterion of reality, the particulars themselves should be primary reality; in that case it would seem absurd to look for "the reality of this reality" and obviously impossible to discover by analysis of the particular an element which is the principle of this particularity and which at the same time itself satisfies the conditions of reality. If the "form" of the particular, for example, exists actually, i e is real, only if it is χωριστόν (cf. *Metaphysics* 1071 A 8-9), the reality of the form is to be a particular, for, even if χωριστόν here means "separate from particulars," this separateness would itself be particularity, but that would be either to explain reality by a principle of which it is itself the reality or to make one particular the reality of another without even attempting to find a principle of particularity itself. On this view, then, the reality of the particular must be just its peculiar particularity, and this the particular would have in virtue of neither matter nor form Not in virtue of form, for the form is neither particular itself nor does it signify the particularity of the particular, it is a qualification of the particular on the separate existence of which its own existence depends and save as a quality of which it exists only potentially On the other hand, the matter of which anything is made has the separateness of a particular, but that is as "formed matter," not as matter but only as "relative matter", if this too be analyzed in order to discover the principle of this separateness, besides the forms which are qualifications will be found only a completely indeterminate subject, a residuum of mere potentiality. No combination of material and formal potencies can produce the actual separateness of the particulars; only by refusing to press the analysis to its logical conclusion and by taking as

with it the character of being χωρισταί). So in 1026 A 10-16 the objects of both physics and first philosophy are called χωριστά (Schwegler's emendation in line 14 being assured not only by the necessary balance of the sentence [cf Ross, *Metaphysics*, 1, p 355] but also by lines 10-12 which *say* that the distinction lies not in χωριστόν but in κινητόν and ἀκίνητον), although the χωριστόν of the ἀΐδιον καὶ ἀκίνητον καὶ χωριστόν in 1026 A 10-11 *should* mean "separate from matter" (as in 1025 B 28 and 1026 A 15 the form and mathematical objects respectively are οὐ χωριστά in this sense) and so cannot be equivalent to the χωριστόν asserted of physical objects, the scheme of Aristotle's argument presumes that the term is univocal

"given" the particularity of the special or proximate matter can it be made to appear that the separateness of the product derives from the substrate in any process of generation.[282]

If, however, the particular is not primary reality, the separateness which characterizes it must be indicative of its derivative nature. Now, the separateness of the particular is just the outer aspect of its unity, for it is only as a "self-contained unit" that the particular can exist "apart." This unity, however, is the result of the limitation of indeterminate matter; and the cause of this limitation is the essential form, the primary reality which as an immaterial unity is the principle of the particular unit.[283] The particular has its peculiar separateness as a materiate unit, but being materiate it is neither stable nor fully determinate. The essential form, on the other hand, as immaterial cannot have the kind of unity which is marked by the separateness of the particular just because as immaterial it is a fully determinate, completely actual unity.[284] As such

[282] For the form as qualification and the proximate matter as a particular, i e "formed matter," see pages 330 334 *supra* Note especially that the form of the new animal is in the sperm only potentially (*Metaphysics* 1034 A 33-B 1 [cf *De Gen Animal* 735 A 4-9]) For proximate matter as relative cf *Physics* 194 B 9, in *Metaphysics* 1010 A 22-25 and 1063 A 27-28 form or essence is identified with ποιόν and contrasted with the element ποσόν in physical reality (cf in *De Part Animal.* 692 B 3-9 the contrast of μορφή with ὑπεροχή καὶ ἔλλειψις and μᾶλλον καὶ ἧττον)

[283] For the particular as the limitation of indeterminate matter by form cf. *Metaphysics* 989 B 18-19, *Physics* 210 A 6-9, for the essential form as πέρας, *Metaphysics* 1022 A 8-10 and the passages cited in note 83 *supra* Only those things are particular reals that are units or wholes (see pages 254-255 *supra*); and the primary reality is the unitary essence which in each case makes the matter the particular unit that it is, being itself neither an element of the particular unity nor the unity compounded of these elements (*Metaphysics* 1041 B 4-33, cf also 1052 A 33-34) See also *Metaphysics* 1077 A 21-23 where τὰ ἐνταῦθα are said to be unities in virtue of soul or a part of soul or something else, and cf 1040 B 5-16, where the apparent οὐσίαι which are in fact only parts are said not to exist separately because none of them is a unity, so that when Aristotle calls the particular χωριστόν it must be just because it is a unity in itself.

[284] For the instability of the particulars (cf *De Anima* 415 B 4-5, *De Gen Animal* 731 B 33-35) and their indeterminateness as materiate contrasted with the determinateness and full actuality of the immaterial forms see notes 253, 261, and 263 *supra*

it must be completely distinct from every other unity; and, since it is as such that it is primary reality and the principle of the particular's being and unity, since it is as τόδε τι καὶ χωριστόν that the form is more real than the complex of form and matter and prior to it (1029 A 5-7 and 27-32), the separateness of the reality must be complete formal distinctness and not the particularity of the materiate unit

In distinguishing materiate and formal unity and in making the latter the criterion of primary reality and the principle from which the former is derived Aristotle is, then, bound to recognize that χωριστόν also has two different senses, of which the primary sense applies only to immaterial forms and the other only to the imperfect and derivative unity of particulars. Yet, as has already been observed, he ascribes "absolute separateness" to particulars and to certain forms alike, makes no distinction between the separateness of the immaterial, primary essence and that of physical objects, and goes so far in his uncritical acceptance of the term χωριστόν as even to localize his own immaterial and unextended prime mover (cf. *Physics* 267 B 6-9). For him the two meanings of χωριστόν coincide in the conception of immaterial essence as τὸ εἶδος τὸ ἐνόν (cf. 1037 A 29-30), for he supposes that true reality so conceived can be "separate" in both senses at once, as form being "separate in thought" but absolutely separate as particularized. Yet, in the first place, it is not sufficient to say that the form is separate only in thought, as if formal separateness could thus be reduced to an abstraction of one aspect of the really separate particular; as the particular is unintelligible because, being materiate, it is not a fully determinate unit and so not a primary and self-subsistent entity identical with essence (cf 1036 A 2-12, 1039 B 27-1040 A 5, 1037 A 21-B 7), it is just because the form is itself a self-contained and completely actual unity that it can be thought apart. To be "separate in thought" implies an objective separateness other than particularity. Moreover, even apart from the fact that the notion of τὸ εἶδος τὸ ἐνόν leaves unexplained the sense in which any form "apart from the particulars" can be supposed to be "absolutely separate," it is itself a catachresis which rather conceals than reconciles the two senses of χωριστόν. It is true, though tautologous, to say

that the form, being immaterial, cannot be locally separate from the particular, for only materiate units can be thus separate; but then it cannot be *in* the particular in this sense either, and, if it is itself not absolutely separate because it has not local separateness but its "being in" the particular is something other than localization, even this relationship would not render it absolutely separate. How by being in the particular in *any* sense the form can be both separate as particularized and at the same time the immaterial essence which is primary reality Aristotle does not and cannot say, unless in accordance with his attempt to resolve the same difficulty as manifested in generation (1033 A 24-31, see note 256 *supra*) the relation to the particular and the consequent separateness be explained as only "accidental" to the nature of the immaterial form. The very term "indwelling form" stamps Aristotle's conception of οὐσία as a combination of contradictory characteristics; and this was inevitable if primary reality was to be not the sensible particulars themselves but the principle of their being and yet could be reality only by satisfying conditions peculiar to those particulars.[285]

The ambiguity of οὐσία and the terms denoting its characteristics is naturally reflected in Aristotle's criticism of the ideas. As real they must be separate; but, if separate, they are particu-

[285] Cf Werner, *Aristote et l'Idéalisme Platonicien*, pp 88-89 If the relation of form to particular is more than "accidental," if the form is coexistent with the particular (1070 A 21-24), then each particular must have it own form; and this also is the implication if the form is the οὐσία of the particular and the οὐσία of each thing is peculiar to it (1038 B 10, note 220 *supra*). It comes to the same thing when in *Metaphysics* 1087 A 7-10 Aristotle solves the problem as to what manner of principles can allow for a multiplicity of separate reals (i e for himself "particulars," 1086 B 19-32, see note 247 *supra*) by pointing to the unlimited number of similar syllables made possible by the fact that each of the letters, the principles of the syllables, is itself a multitude, each of the many particulars, then, has a form of its own, certain particulars being "similar," i e alike in form, because their forms are 'similar" (cf. 999 B 27-1000 A 4) In that case, however, the question is only removed one step, for the "similarity" of the forms themselves remains to be explained, and, as has been seen (pages 345 351 *supra*), Aristotle in considering the object of knowledge is constrained to treat this multiplicity of "similar" forms as the repetition of a single form to which the repeated particularization can, once more, be only accidental

lars and so cannot be the reality of anything else. On the other hand, they are supposed to be the reality of the sensible particulars; but, since nothing can be separate from that of which it is the reality, they would have to be *in* the particulars, in which case not being separate they could not themselves be real. Furthermore, since they are universals, they can be neither real themselves nor the reality of anything else; not the first, because an universal is always predicated of a subject and so is never separate, and not the second, because an universal is always common to several subjects whereas the reality of each thing is peculiar to it (see pages 318-326 and note 230 *supra*).

Now the "reality of a particular" which is peculiar and cannot be separate is just what the particular is as *this* particular, i e. the particularity itself. That, however, is not the sense in which the immaterial essence is the "reality of a particular," i e. the cause of the particular's being; this, being more real than the particular, must be real as *not* being particular and so separate otherwise than as a particular. It can, then, be the identical reality of many particulars which, being materiate, will not be identical, for the particularity of each will still be peculiar to it [286] Moreover, this "reality of particulars" will not only be real without being itself a particular; it will also be "universal" as the reality of all these particulars without being merely a common predicate of a number of subjects or a general formula of similar attributes inhering in a multiplicity of real particulars, the sense in which Aristotle takes "universal" when he denies the reality of universal ideas,[287] although of his own essential form, as has been seen

[286] With the argument ὧν γὰρ μία ἡ οὐσία καὶ τὸ τί ἦν εἶναι ἕν, καὶ αὐτὰ ἓν (1038 B 14-15, note 220 *supra*) contrast ἀριθμῷ ⟨ἀεὶ ἕν⟩ ὧν ἡ ὕλη μία (1016 B 32-33, see Appendix V) The ambiguity of "the reality of x" is illustrated by the statement that οὐσία belongs only to itself and to that which has it, of which it is οὐσία (1040 B 23-24, note 220 *supra*), for, being identical with itself, it must be its own reality in a sense different from that in which it is the reality of the particular with which it is not identical

[287] See *Metaphysics* 1040 B 25-30, 1038 B 11-12 (cf *Eth Eud.* 1218 A 8-9), and note 121 *supra* the universals which the Platonists make ideas are only common predicates, but once these are set up as separate substances they lose their universality, for they can no longer be common Interestingly enough Alexander (*Metaph*, p 50, 8-12) in commenting on the origin of the theory of

(pages 345-352 *supra*), the ambiguous καθόλου is used quite differently

The technical term καθόλου Plato does not employ, though its origin is probably to be found in certain phrases of his (see page 199 *supra*), but he does use the word κοινόν in reference to the objects of knowledge (see note 141 *supra*). He does, moreover, call the ideas οὐσία (see pages 221-222 *supra*) and say that they exist "apart" (cf χωρίς [e g *Parmenides* 130 B-C] and see pages 205-211 *supra*), although he does not use the adjective χωριστόν. This "being apart," however, which to Aristotle meant that the ideas must be in effect particulars and which seemed to him to be justification for applying to them his own criteria of οὐσία (see pages 220-222, 305-309, 314-315 *supra*), had for Plato no such implication but instead expressed the exemption of true reality from all the conditions of particular existence. To Plato the nature of a particular is γένεσις (*Symposium* 207 D-E, *Timaeus* 27 D-28 C, 52 D; *Philebus* 59 A-B); it is, therefore, never τόδε but only ποιόν τι (see notes 216 and 217 *supra*), an ever-shifting approximation, likeness, or image of reality, and as such the conditions of its being are to be *of* something other than itself and *in* something other than itself. What Aristotle calls the separateness of particulars is to Plato just this being in space which is not separateness at all but rather the fleeting inherence in a medium of the scattered reflections of indivisible reality (cf *Timaeus* 35 A, 37 A); and, since Plato asserts that true reality is never *in* anything else and cannot be spatial, he cannot fairly be charged with having inadvertently made the ideas particulars by "separating" them, for he expressly repudiates as a confusion of thought the tendency to take as a criterion of reality the localization which is the characteristic of particulars (*Timaeus* 52 A-C). This distinction between the similar characteristics coming to be and passing away as particular qualities in space

ideas says that Plato decided that definitions could not be of τῶν αἰσθητῶν τινος οὐδὲ τοῦ ἐπὶ τούτοις καθόλου τῷ ταῦτα καὶ τὰ ἐν τούτοις πάντα, ἐν οἷς καὶ τὰ καθόλου, ἀεὶ ῥεῖν τε καὶ μεταβάλλειν. For objections of Neo Platonic commentators to the sense in which Aristotle uses καθόλου of the ideas see note 260 *supra* and for discussion of the different senses of the term cf particularly Syrianus, *Metaph*, p 161, 4-34 and Simplicius, *Categ.*, pp. 82, 35-83, 16.

and the indivisible, eternal reality which is their source, a distinction made "already" in the *Phaedo* between the particular characters ἐν ἡμῖν and the ideas ἐν φύσει on the interrelations of which those of the former characters depend (102 D, 103 B, 103 C-105 B),—this distinction indicates at the same time that in positing the universal as an idea Plato was not unwittingly "separating" the generalization or abstraction of similar particular attributes For him the universal is not the unity of a multiplicity in the sense that each of many particulars is the whole of that unity which exists in its entirety in all of them severally (cf. *Metaphysics* 1023 B 29-32), for he denies that any particularization of a character is fully or exactly that character but considers that all are only approximations to it, so that the name of a character is never applied *exactly* to any particular (see note 175 *supra* and the Academic argument reported by Alexander [*Metaph.*, p 83, 6-17]). So the idea of beauty, for example, which is "nowhere in anything else," is not the same as any particular beauty, of all of which it is the source but the coming to be or passing away of any or all of which does not increase, diminish, or in any way affect the idea itself (*Symposium* 211 A-B). Such a conception is not to be explained as due to ignorance of the mechanism of abstraction, for Plato denied that the universal can be the result of such a process, maintaining instead that the process itself with the comparison which it involves presupposes the universal as a real entity other than the sensible approximations to it (see notes 127 and 128 *supra*). This and the fact that he believed the "third man" argument to have no cogency against the theory of ideas (see pages 293-300 *supra*) show that for him an idea was neither a particular comparable with particulars nor an universal in the sense of a similarity of particulars but rather the cause of that which in particulars is similar whenever and wherever it occurs and therefore itself neither temporal nor spatial but an eternal individual other than any and all of its representations and universal as the original of which all are copies and as what is really meant by the name which is given to all these representations in common [288] The opposite atti-

[288] Cf the κοινὸν ὄνομα of *Timaeus* 83 B-C So from the point of view of

tudes of Plato and Aristotle toward the "third man" argument epitomize the fundamental difference of their notions of reality; Aristotle's arguments against the reality of the ideas are of a piece with his attempt somehow to determine the nature of οὐσία by the conditions of sensible existence, whereas for Plato these are just the indications of a falling short of true reality of which consequently they cannot be the criteria.[289]

4 The Relation of Ideas and Particulars

Even if, in spite of everything, the existence of ideas were to be assumed, their relation to phenomena would still remain a problem, the most puzzling problem according to Aristotle, who in a section of the *Metaphysics* which appears to represent the second book of his work περὶ ἰδεῶν[290] argues that such entities could contribute nothing to any sensible

Metaphysics 991 A 8-B 9, 1079 B 12-1080 A 8

perceptible particulars the objects of knowledge are called κοινά (see note 141 *supra*), for whatever is known is nothing peculiar to any particular but an entity in which many particulars participate

[289] On the importance of the distinction between eternity and duration for Plato's conception of οὐσία, neglected or minimized by Aristotle, see pages 211-213 and note 126 *supra*, for the relation of this distinction to the "third man" and the different conceptions of οὐσία implied in the Aristotelian and Platonic attitudes toward that argument see pages 307-312, 315-318 *supra*

[290] See Appendix II and the article of H Karpp there cited In commenting on *Metaphysics* 991 A 18-19 Alexander refers Aristotle's words to the second book of περὶ ἰδεῶν (*Metaph*, p 98, 21-24), and on 1080 A 9-11, the sentence which in M is added as a conclusion there to the doublet of the passage in A, Syrianus refers to the corresponding passage in A *and* to the two books of περὶ ἰδεῶν (*Metaph*, pp 120, 33 121, 4, cf also p. 195, 10-16) Von Arnim (*Wiener Studien*, XLVI, pp 26-27), in the belief that 991 B 1-3 returns to the point already made in 991 A 13 and that 991 B 3-9 simply repeats thoughts already expressed in 991 A 8-B 1, contends that 991 B 1-9 consists of two supplements drawn by Aristotle from an earlier writing and added to 991 A 8-B 1 The περὶ ἰδεῶν, however, was almost certainly the source of the argument in 991 B 6-9 which is based upon the absence of ideas of artefacts (see page 258 *supra*), as it was according to Alexander the source of 991 A 14-19 It has already been observed that 991 B 1-3 is not a *repetition* of 991 A 12-14 (see note 230 *supra*), and the subsequent analysis will show that 991 B 3-9 cannot be separated from 991 B 1-3 and is not a repetition of the thought of 991 A 8-B 1 (see note 295 *infra*) The relation of *Metaphysics* 992 A 24-B 9 to 991 A 8-B 9 (see note 132 *supra*) guarantees the general unity of this section

object whether eternal or perishable. In the first place, they cannot themselves be causes of motion or of any change for sensibles (991 A 11 = 1079 B 14-15) [291] Secondly, not being *in* the sensibles they are not the οὐσία of them and so even as objects of knowledge contribute nothing to the knowledge of other things (cf *Metaphysics* 1031 B 6-7 and 20-22), nor can their existence contribute to the being of the participants in which they are not present (991 A 12-14 = 1079 B 15-18) The theory of Eudoxus, which might seem to meet this difficulty by making the ideas immanent in sensibles, Aristotle dismisses as being easy to overthrow (991 A 14-19 = 1079 B 18-23); [292] and, after pointing out that other things do not "come from" the ideas in any ordinary sense of the word, he directly attacks the Platonic account with the assertion that to call the ideas "models" and say that other things "participate" in them is to take refuge in meaningless metaphors (991 A 19-22 = 1079 B 23-26). [293] The metaphor itself would imply the "copying"

[291] Because, says Alexander (*Metaph.*, p 96, 14-16), since according to the Platonists the ideas are themselves immobile, they are the causes of rest rather than motion and so cannot be a ποιητικὸν αἴτιον That the ideas cannot be causes of anything or at any rate not of motion Aristotle asserts in *Metaphysics* 1075 B 27-28, and in *Metaphysics* 1071 B 14-16 he implies that there is in the ideas no principle capable of causing change In *Topics* 113 A 24-32, 137 B 3-8, 148 A 14-22 various arguments are based upon the immobility and impassivity of the ideas, but in the last of these passages the contention is that, since the ideas are said to be ἀκίνητοι, no definition including the characteristic ποιητικόν can apply to an idea In *Metaphysics* 988 B 2-4, where Aristotle says that those who posit ideas do not conceive them to be the source of movement, he supports this statement with the words ἀκινησίας γὰρ αἴτια μᾶλλον καὶ τοῦ ἐν ἠρεμίᾳ εἶναι φασιν Although this might at first seem to be a direct quotation, Robin is certainly right in saying (*Idées et Nombres*, n 101[1] [pp 94-95]) that Aristotle here puts into the form of direct testimony what is really just a deduction of his own; the passages above show that it was only because the ideas were said to be ἀκίνητοι that Aristotle concluded that no idea could be ποιητικόν.

[292] See Appendix VII

[293] So in *Eth. Nic* 1138 B 5 13 Aristotle calls metaphorical such an account of justice as is given in *Republic* 443 C 444 A, cf the similar characterization of a theory of Empedocles (*Meteorology* 357 A 24-28) and the general verdict in *Topics* 139 B 34-35· πᾶν ἀσαφὲς τὸ κατὰ μεταφορὰν λεγόμενον That the nature of imitation or participation had never been explained Aristotle maintains elsewhere (*Metaphysics* 987 B 13-14, cf 1045 B 7-9, 1075 B 34-37); and these passages indicate that 991 A 19-20 (. . οὐδ' ἐκ τῶν εἰδῶν ἔστι τἆλλα κατ'

of the models; but what productive agent, he asks, functions by looking to the ideas (991 A 22-23 = 1079 B 26-27)? Furthermore, as one thing may be or become like another without being modelled on it, so, even if this latter thing be eternal, it still would not follow that it must be the model for the generation and existence of all things similar to it (991 A 23-27 = 1079 B 27-30). Should the metaphor be allowed, however, there would be many models of one and the same thing, of a man—for example—the ideas of animal and biped as well as that of man (991 A 27-29 = 1079 B 31-33); and the same thing would be both a model and a copy, for the generic idea would stand as a model to its species (991 A 29-B 1 = 1079 B 33-35).[294]

οὐθένα τρόπον τῶν εἰωθότων λέγεσθαι) is not meant as a reference to different Platonic explanations but only clears the way for the attack which follows by stating that sensibles are not derived from the ideas in any but a Pickwickian sense of *ἐκ* (cf *Metaphysics* 1092 A 21-24 and n b *Topics* 140 A 5· *πᾶν ἁσαφὲς τὸ μὴ εἰωθός*) The statement here (*τὸ δὲ λέγειν παραδείγματα αὐτὰ εἶναι καὶ μετέχειν αὐτῶν τἆλλα κενολογεῖν ἐστὶ καὶ μεταφορὰς λέγειν ποιητικάς*) is referred to in the résumé at 992 A 28-29 with the words . . . *διὰ κενῆς λέγομεν· τὸ γὰρ μετέχειν, ὥσπερ καὶ πρότερον εἴπομεν, οὐθέν ἐστιν.*

[294] With this last (991 A 29-B 1) cf 990 B 6-8 (see note 117 *supra*) and Alexander, *Metaph*, pp 98, 13-16 (in the 6th objection to Eudoxus), 105, 5-10 and 19-23 (see Appendix VII *infra*), and for the interpretation of the "more universal" genus as an "idea of ideas" see the passages cited in note 7 *supra* and cf *Metaphysics* 1083 B 34-35 On 991 A 27-29 cf Alexander, *Metaph*, p. 98, 9-12 (first part of the 6th objection to Eudoxus) with p 105, 2-5; and observe the argument that the particular living being would be *πολλὰ ζῷα* (*Metaphysics* 1003 A 9-12)

The question at 991 A 22-23 (*τί γάρ ἐστι τὸ ἐργαζόμενον πρὸς τὰς ἰδέας ἀποβλέπον*,) seems to Philippson to support his thesis (*Riv di Filologia*, LXIV [1936], pp 122-123; see Appendix VII, page 538 *infra*) because Aristotle would have had no reason to ask it, had he known *Timaeus* 28 A-29 A (cf. also *Sophist* 266 B, *Philebus* 23 D, 26 E-27 B, 30 A-E), which Philippson consequently takes to be the answer to this question put by Aristotle in the *περὶ ἰδεῶν*. Yet the work of *ὁ τοῦ οὐρανοῦ δημιουργός* is likened to that of a painter as early as the *Republic* (529 D-530 B); and Aristotle in a book in which he refers to the *Timaeus* (1072 A 2-3) does not hesitate to demand what the cause of *μέθεξις* is (1075 B 17-20, see note 296 *infra*) So the question here might be meant to deny that the Demiurge of the *Timaeus* is a serious philosophical principle (cf especially E. Bignone, *Studi sul Pensiero Antico*, pp 263 4, who quotes for Aristotle's attitude *Metaphysics* 1000 A 18-19 *περὶ τῶν μυθικῶς σοφιζομένων οὐκ ἄξιον μετὰ σπουδῆς σκοπεῖν*). It is probably, however, a more general reference to the common Platonic formula (see note 150 *supra*) and so

Moreover, the Platonic "metaphor" aside, the *Phaedo*, Aristotle observes, makes the ideas the causes both of being and of becoming Since they are, then, the οὐσίαι of things, how, he asks, could they exist apart? Yet even granting the existence of ideas, there is no generation of the participants unless there exists that which will initiate motion[295] This, it is implied, and not the ideas would be the true cause,[296] and Aristotle then uses the example of artefacts (see note 147 and pages 256-260 *supra*) to show that the assumption of ideas as causes of being and becoming is superfluous in any case (991 B 1-9 = 1079 B 35-1080 A 8).

De Generatione 335 B 7-24

Elsewhere, in establishing the necessity of the efficient cause as a third principle in addition to form and matter, Aristotle contrasts those who made matter itself the source of change (cf *Crit. Pres. Phil.*, p. 228, n. 48) and those who thought the ideas a sufficient cause of generation; and for the latter he refers again to the

amounts to the argument that no productive agent in our experience does function in this fashion (cf Alexander, *Metaph*, p 101, 24-31) Thus in *Eth Nic* 1097 A 11-13 Aristotle argues that the physician does not heal by looking to the idea of health and in *Metaphysics* 1033 B 29-1034 A 5 that in natural generation the εἶδος ὡς παράδειγμα would be a superfluity (cf [Alexander], *Metaph*, p 497, 34 . μήτε δὲ εἰς παράδειγμα ἀφορῶν τὸ γεννῶν γεννᾷ τὸ γενητὸν γενητόμενον .).

[295] Aristotle refers to *Phaedo* 100 C-E, 101 C. This reference is both the point of departure for the argument concerning the efficient cause (991 B 4 9) and the support for the preceding statement (991 B 1-3) that the ideas are really meant to be οὐσίαι τῶν πραγμάτων (cf . τοῦ εἶναι . . . αἴτια τὰ εἴδη with τὸ αἴτιον τοῦ εἶναι πᾶσιν ἡ οὐσία [*De Anima* 415 B 12-13, etc] and observe the use of οὐσία in *Phaedo* 101 C) This and the fact that after the ἔτι of 991 B 1 there is no other such sign of division until 991 B 9 show that 991 B 1-3 and 991 B 3-9 are not to be separated The criticisms turning on efficient and formal causality are linked together in the résumé also (992 A 24-29 [on 992 A 24-B 9 see note 132 *supra*]) the theory of ideas fails to account for τὰ φανερά because it says nothing of the cause which is the source of change, and it gives a futile explanation of how the ideas are the οὐσίαι of sensibles, τὸ γὰρ μετέχειν οὐθέν ἐστιν. Despite the direct reference here to 991 A 20 22, the "metaphor" of παράδειγμα is disregarded, as it is also in 991 B 1-9, in the section of the *Phaedo* there referred to (100 D) Socrates refuses to insist upon any special designation for the relation between ideas and particulars.

[296] At *Metaphysics* 1075 B 17-20 it is said that those who posit ideas ought to have a still more sovereign ἀρχή. διὰ τί γὰρ μετέσχεν ἢ μετέχει, cf 1045 B 8-9 . . . καὶ αἴτιον τί τῆς μεθέξεως . . . ἀποροῦσιν.

Phaedo where, he says, Socrates, after censuring the accounts of others (*Phaedo* 96 A-99 C), supposes that there are ideas and their participants and that "being" is ascribed to anything in virtue of the idea, "becoming" in virtue of participation, and "perishing" in virtue of loss, so that he necessarily believes the ideas to be the causes both of generation and of destruction (cf *Phaedo* 100 C-E, 101 C) Here too Aristotle objects that at least for the products of art we *see* that the cause is something else, that a physician or a teacher, for example, is required for the production of health or knowledge even though there be absolute health and knowledge and things which can partake of them (335 B 20-24); but he also makes the more comprehensive complaint that the theory fails to explain why, though there are always ideas and things to participate in them, there is only intermittent and not continuous generation (335 B 18-20). Even the account of the "materialists" is more scientific than such a theory, he says, for they recognize that the cause of generation is a motive agent even though they mistakenly ascribe this motive power to matter itself (*De Generatione* 335 B 24-31); according to him, the agent is rather the actualized form, that is a particular thing, the influence of which on a particular material brings to actuality the form which the latter already has potentially.[297]

While the theory of ideas cannot explain the intermittence of generation and destruction, it is equally incapable of accounting for the perpetuity of movement and process which for Aristotle constitutes the eternity of the world. The ideas are at best potentialities, whereas for the change that is without beginning or end there must be a cause which not only *can* or *does* act but of which actuality is the essence.[298] The ultimate cause of all

[297] ἄνθρωπος γὰρ ἄνθρωπον γεννᾷ, ὁ καθ' ἕκαστον τὸν τινά· cf. *Metaphysics* 1033 B 16-1034 A 8, 1070 A 27-30, 1071 A 17-24 (α b A 18-19 πάντων δὴ πρῶται ἀρχαὶ τὸ ἐνεργείᾳ πρῶτον τοδὶ καὶ ἄλλο ἢ δυνάμει), see pages 330-331 and note 238 *supra*. ὥστε αἴτιον οὐθὲν ἄλλο πλὴν εἴ τι ὡς κινήσαν ἐκ δυνάμεως εἰς ἐνέργειαν. cf. 1045 A 30-33, 1045 B 16-22 (see note 263, ¶ 2 *supra*), 1075 B 34-37: ἔτι τίνι . . . ἓν . . . τὸ εἶδος καὶ τὸ πρᾶγμα, οὐδὲν λέγει οὐδείς· οὐδ' ἐνδέχεται εἰπεῖν, ἐὰν μὴ ὡς ἡμεῖς εἴπῃ, ὡς τὸ κινοῦν ποιεῖ

[298] *Metaphysics* 1075 B 16-17 ἔτι διὰ τί ἀεὶ ἔσται γένεσις καὶ τί αἴτιον γενέσεως οὐδεὶς λέγει. For the eternity of change see *Metaphysics* 1071 B 6-11 (cf. *Physics* 252 B 5-6, *De Generatione* 337 A 22-25) and 1071 B 12-20 for the

actualization, then, is this principle which moves as the unmoved goal and purpose.[299] With such a cause, however, in virtue of which all intelligence and all nature operate, the ideas have no connection. So, at any rate, Aristotle says in recapitulating his criticism of the theory in regard to its treatment of the four causes (*Metaphysics* 992 A 29-32, see note 132 *supra*), although elsewhere he taxes it not with absolute neglect of the final cause but with an inadequate articulation of this principle. Those who say that Unity or Being is something good,[300] he contends (*Metaphysics* 988 B 6-16), are asserting the existence of a cause of being (*τῆς οὐσίας αἴτιον*) but not that being or becoming is for the sake of this; consequently, the good which is the final cause of activity and change they make not a cause in its own right but an accident of the formal cause, just as Anaxagoras and Empedocles make it an accident of the efficient cause. At one time Aristotle commends the Platonists for making the good a

argument that as the cause of this perpetual movement eternal substances like the ideas would be useless *εἰ μή τις δυναμένη ἐνέσται ἀρχὴ μεταβάλλειν*, that not even this would suffice *οὐδ' ἄλλη οὐσία παρὰ τὰ εἴδη* (see note 311 *infra*), since, if it should not be an actual movent, there would be no motion, and finally that not even its actuality is enough if its essence is potency, *ἐνδέχεται γὰρ τὸ δυνάμει ὂν μὴ εἶναι* Since in 1075 A 32-36 and 1075 B 20-24 the ideas are treated as one term of a contrariety and as, in consequence of this, existing *δυνάμει* (see pages 102-104 *supra*), 1075 B 30-34 must be understood as a criticism of the ideas based upon the same kind of interpretation: no contrary, Aristotle there says, could be essentially productive and motive, for it would be possible for it not to be and its action would be posterior to its potency, with the result that the existing world would not be, as it is, eternal For the treatment of the Platonic ideas as mere potencies see also page 333 *supra*

[299] The cause of the continuity of change is the circle of the fixed stars, that of the variation the obliquity of the ecliptic, both together in the compound motion of the sun being the direct cause of the continuous variation (*Metaphysics* 1072 A 9-18, *De Generatione* 336 A 15-B 24 [cf *Metaphysics* 1071 A 13-17, *Physics* 194 B 13]) The mover of the circle of fixed stars, however, and so of the sun and ultimately of all things is the unmoved mover (*Metaphysics* 1072 A 19-B 14, cf 1070 B 34-35 and *De Generatione* 337 A 17-22), the actuality which is the origin of all actualization (*Metaphysics* 1050 B 3-6)

[300] *ὡς δ' αὗται* (as Anaxagoras and Empedocles, for whom cf. *Crit Pres. Phil*, p 223, n. 26) *καὶ οἱ τὸ ἓν ἢ τὸ ὂν φάσκοντες εἶναι τὴν τοιαύτην φύσιν* (i. e *ἀγαθόν τι*, cf. 988 B 9) That this is meant to refer to Platonists among whom Plato himself is included is clear from the immediately preceding passage, 988 A 34 B 6, and especially from 988 A 7-17 (see page 184 and note 62 *supra*)

principle and complains only that they do not say how it is so, as end, as movent, or as form (*Metaphysics* 1075 A 38-B 1); but again he maintains that their real error lies in the fact that, while they set up the good as a principle, they identify it with the one and regard its essence not as goodness but as unity [801]

[801] As against those who do make the good an ἀρχή (*Metaphysics* 1075 A 38-B 1) Aristotle has criticized those who do not consider the good and the bad as principles at all (1075 A 36-37). These are the Pythagoreans and Speusippus who at 1072 B 30-1073 A 3 are said to believe that the fairest and best μὴ ἐν ἀρχῇ εἶναι because in plants and animals perfection resides not in the principles which are their causes but in the effects produced by these principles, to this Aristotle's reply is that the complete organism is prior to the seed In *Metaphysics* 1092 A 11-17 there occurs the same refutation of this same doctrine, which in 1091 A 33-B 1 is said to have been adopted by certain modern thinkers in order to avoid the difficulty which results for those who make the one a principle These (i e Plato and his followers, see note 300 *supra*), Aristotle says, identified absolute Unity and absolute Good but, nevertheless, thought its essence to be preeminently Unity (1091 B 13-15) He who sought to avoid the consequences of this doctrine (i. e Speusippus) agreed that the one is a first principle and element but refused to connect the good with it (1091 B 22-25 and 32-35), but Aristotle contends that the Platonic doctrine incurs difficulties not because it ascribes goodness to the first principle (for the primary, eternal, and most self-sufficient entity can have these qualities only as goods and so only because it is itself good) but because it makes this principle Unity and a principle in the sense of an element (1091 B 1-3 and 15-22, see also note 62 *supra*). At *Eth Nic.* 1096 B 5-8, after having attacked the Platonic theory of the absolute good as a separate idea, Aristotle adds that the Pythagoreans give a more plausible account when they place the one in the column of goods and that Speusippus seems to have followed them in this matter This passage also has been taken to imply that Plato made the good identical with the one or an attribute of it (cf. Robin, *Idées et Nombres*, n 455 [on p 512]) It has no such implication, however There is in the preceding argument no reference to "idea-numbers" (see Appendix VI *infra*) and the idea of good is attacked not on the ground that it is *the* one or a mere attribute of Unity but because it is *a* unit just as every idea is a unit (*Eth. Nic* 1096 A 27-28, see note 270 *supra*, 1096 A 34-B 5, see pages 202-203 *supra*) In saying that the Pythagoreans make *the* one *a* good Aristotle is approving only what he interprets as an agreement with his own contention that there is not one good but many, and the Platonic doctrine implied in this comparison is not that *the* one is *the* good but that *the* good is *a* one, i e a single unit. So much of the passage was correctly understood by Stewart (*Notes on the Nicomachean Ethics*, I, p 84· "the Pythagoreans 'make the One good instead of making the Good one' ") whose note was apparently misunderstood by Robin (*loc cit*), Burnet's note on the passage (*The Ethics of Aristotle*, p. 27) is entirely wrong. On Aristotle's interpretation

Even if the nature of this principle is recognized as essentially good, however, its status as final cause in the Platonic theory is challenged by Aristotle's contention that for immobile entities there can be no absolute good or final cause, since such a cause is always the goal or purpose of action and all action involves movement (*Metaphysics* 996 A 21-29, cf. 1059 A 35-38). Although he himself vindicates a kind of final cause in the case of mathematics, he does so by distinguishing between the good and the beautiful and here too restricts the former to the sphere of action (1078 A 31-B 6, cf. *De Motu Animal.* 700 B 23-28). His denial of an αὐτοαγαθόν for immobiles, then, implies that the ideas at any rate could not be related to the absolute good as to a final cause and would therefore be equivalent to mathematical objects [802]

Despite Aristotle's sweeping charge that the Platonic theory says nothing about the cause which is the source of change (*Metaphysics* 992 A 25-26), that theory contains three different elements against which at different times he argues as unsuccessful attempts to explain the principle of movement or change.[803] For one thing, in his own discussions of motion and

of the Pythagoreans here and his connection of them with Speusippus cf. *Crit Pres Phil.*, p 241, n 111

[802] Cf Ravaisson, *Essai sur la Métaphysique d'Aristote*, I, pp 309-10 For Aristotle's contention that only the formal cause figures in the case of ἀκίνητα (for which his examples are mathematicals) cf *Physics* 198 A 16-18 and *De Gen Animal.* 742 B 33-35, for his immediate identification of ἀκίνητον and μαθηματικόν cf *De Caelo* 305 A 24-26 (Simplicius, *De Caelo*, p 631, 2-5) and *Metaphysics* 1020 B 2-3 (Alexander, *Metaph*, p. 399, 22) At *Eth. Eud* 1222 B 20-25 (which has no parallel in the corresponding passages of the *Nicomachean Ethics* and *Magna Moralia*) it is said that those principles ὅθεν πρῶτον αἱ κινήσεις are ἀρχαί in the proper sense and especially those ἀφ' ὧν μὴ ἐνδέχεται ἄλλως, ἢν ἴσωι ὁ θεὸς ἄρχει, whereas in the strict sense the term does not apply in the sphere of immobile principles such as the mathematical, although it is used here καθ' ὁμοιότητα At *Eth Eud* 1218 A 24-28 (a passage likewise without parallel in the other two ethical works) to the identification of absolute good and unity on the ground that numbers "aim at" (ἐφίενται) the latter it is objected that the sense in which ἐφίενται is used is not specified and that anyway things which have no life cannot be supposed to have appetition (ὄρεξις)

[803] Cf also *De Generatione* 315 A 29-33 where Aristotle admits that Plato did discuss at least the generation and destruction of things so far as this is generation and destruction of τὰ στοιχεῖα (see note 80 *supra*).

of actuality and potentiality he takes cognizance of the idea of κίνησις which Plato expressly posited (*Sophist* 254 D ff., cf. *Parmenides* 129 D-E) and attacks it now on the ground that absolute motion could be only the potency of a subject (*Metaphysics* 1050 B 34-1051 A 2, see page 333 *supra*) and again because there can be no change apart from the different kinds which occur within the irreducible categories of being.[304]

In the second place, he represents the Platonists as connecting motion with the nature of that which he treats as the "material principle" of their system In the very résumé in which he complains that they say nothing of the cause of change he insists that, if there is any source of motion in their theory, it is "the great and the small," although in that case, he objects, the ideas must be in motion (*Metaphysics* 992 B 7-9, see note 132 *supra*). Elsewhere, in establishing his own definition of motion as the actualization of the potential *qua* potential, he refers to their identification of κίνησις with "otherness," "inequality," and "non-being," an identification which results from a combination of statements in the *Timaeus* and the *Sophist*, the "non-being" of the latter, which is really "otherness," being identified with the "receptacle" of the former, the motion of which is referred to "heterogeneity" and thence to "inequality", none of these terms, Aristotle says, can define either the subject or the termini of motion, but motion was referred to them because, not being assignable simply either to the potency or to the actuality of things, it appears to be something indefinite and so to belong to the principles in the second series of opposites which are indefinite because they are privative Since, however, it cannot be assigned simply to privation either, it must be, as he says, an "incomplete actuality," the

[304] *Metaphysics* 1065 B 7-14 = *Physics* 200 B 32-201 A 9. The parallelism of this argument to that against absolute Unity and absolute Good (see note 226 *supra*) is shown by the conclusion ὥστε κινήσεως καὶ μεταβολῆς ἐστὶν εἴδη τοσαῦτα ὅσα τοῦ ὄντος (contrast *Physics* 225 A 34-B 9) Simplicius (*Phys.*, p 402, 11-16) saw that Aristotle's argument is directed against Plato's ἰδέα κινήσεως in the *Sophist* and *Parmenides* (though he thought that it is at the same time meant to refute the notion of the soul as self-moved mover), this is denied by Ross (*Physics*, p 536) because he follows Diels in mistaking the passages of the dialogues which Simplicius has in mind, not seeing that they are just those cited in the text *supra*.

indefinite character of which is due to the fact that the subject is in process and so, though no longer merely potential, has not yet been completely actualized (*Physics* 201 B 16-202 A 3, *Metaphysics* 1066 A 10-26) [805] Then again, Aristotle couples Plato with Leucippus as saying that there is always motion, an assertion which he introduces in support of his own thesis of the priority of actuality, for he takes it to mean that Leucippus and Plato posited the eternity of actuality because they saw that matter could not itself initiate its own motion (*Metaphysics* 1071 B 28-33) [806] He complains, however, that they do not say

[805] The combination of terms with which motion is here identified clearly points to Plato (*Sophist* 256 D-E [*τὸ μὴ ὄν* and *ἡ θατέρου φύσις*], cf Alexander *apud* Simplicius, *Phys*, p 430, 6-12 and Simplicius, *ibid*, p 430, 21-22, *Timaeus* 57 E-58 A [*ὁμαλότης* and *ἀνισότης*], cf Simplicius, *Phys*, p 432, 20-34, cf also Eudemus *apud* Simplicius, *Phys*, p 431, 8-9 [see page 122 *supra*]). The reference to the series of opposites, however, indicates that Aristotle has also in view the Pythagoreans in whose table as given in *Metaphysics* 986 A 22-26 *κινούμενον* appears in the column headed by *ἄπειρον* (cf also Eudemus *apud* Simplicius, *Phys*, p 431, 13-14 [*τὸ δὲ ἀόριστον καλῶς ἐπὶ τὴν κίνησιν οἱ Πυθαγόρειοι καὶ ὁ Πλάτων ἐπιφέρουσιν· οὐ γὰρ δὴ ἄλλος γε οὐδεὶς περὶ αὐτῆς εἴρηκεν*] and [Plutarch], *De Placitis*, I, 23 [= *Dox Graeci*, p 318 A 16 ff *Πυθαγόρας Πλάτων κίνησίς ἐστι διαφορά τις ἢ ἑτερότης ἐν ὕλῃ*]) On this treatment of the Pythagorean classification as equivalent to Plato's account of motion cf. *Crit. Pres Phil*, p 164, and for Aristotle's interpretation of *τὸ μὴ ὄν* of the *Sophist* as absolute non being and as Platonic "matter," his identification of it with the "receptacle' of the *Timaeus*, and his contention that the ideas must consequently be 'in place" and "in motion" see pages 91-96 and 118-123 *supra*

When in *Metaphysics* 1084 A 34-35 Aristotle speaks of Platonists who assign motion and rest to the *ἀρχαί*, it is most reasonable to think of Xenocrates who, we know, made 'the same" the principle of rest and 'the other" the principle of motion (*frag.* 68 = Plutarch, *De An Proc.* 1012 D-F, cf "Timaeus Locrus" 96 A, where both 'the same" and 'the other" of *Timaeus* 35 A are interpreted as principles of motion); notice also that in the classification of Hermodorus *κινούμενον*, being among the *ἀόριστα*, is called *ἄπειρον* and *οὐκ ὄν* (see notes 96 and 192 *supra*)

[806] *διὸ ἔνιοι ποιοῦσιν ἀεὶ ἐνέργειαν, οἷον Λεύκιππος καὶ Πλάτων· ἀεὶ γάρ εἶναί φασιν κίνησιν* (n b that Plato is *not* joined with Anaxagoras here [cf 1072 A 4 7], for Plato's acceptance of the Heraclitean doctrine of continual flux so far as concerns sensibles cf *Metaphysics* 987 A 32-B 7, 1078 B 12-17, 1086 A 37-B 11 [see pages 211-220 *supra*], and for the possible but improbable inclusion of Plato in the classification of *Physics* 254 A 33-B 4 cf 265 A 2-12 and *Crit. Pres. Phil*, p 162, n 80) The Platonic passage to which Aristotle here refers has usually been identified as *Timaeus* 30 A ([Alexander], *Metaph.*, p. 690, 31-32,

why and what this motion is or what is the cause of its being one kind or another; the present distinction between natural motion and that caused by an external agent must always hold,

followed by Bonitz, Schwegler, Ross, *et al*) *ὁ θεὸς πᾶν ὅσον ἦν ὁρατὸν παραλαβὼν οὐχ ἡσυχίαν ἄγον ἀλλὰ κινούμενον πλημμελῶς καὶ ἀτάκτως εἰς τάξιν αὐτὸ ἤγαγεν ἐκ τῆς ἀταξίας* . There, however, the "eternity" of motion is at best implicit, and, although Aristotle does refer to this passage elsewhere, in the sentence quoted above (1071 B 32-33) he is more likely to have in mind *Timaeus* 57 E-58 C, whence he derived the identification of motion with "inequality" (see note 305 *supra*) and which closes with the words *οὕτω* . . *ἡ τῆς ἀνωμαλότητος διασῳζομένη γένεσις ἀεὶ τὴν ἀεὶ κίνησιν τούτων οὖσαν ἐσομένην τε ἐνδελεχῶς παρέχεται*. To this passage he refers in *De Generatione* 337 A 7-15 also, where, saying that his own explanation has solved the problem posed by some concerning the perpetuity of change, he rejects without discussion the answer offered by Plato (see note 91 *supra*). Although there the rejection of Plato's explanation is merely tacit, elsewhere specific criticisms are made of certain applications of the principle on which it is based, namely that, since there is no void, every motion sets up a circle of propulsion (*περίωσις*) or reciprocal replacement. In *Physics* 215 A 14-19 Aristotle, arguing against the hypothesis of a void, mentions *ἀντιπερίστασις* as an explanation of the movement of projectiles (*ibid*, line 15, for which Simplicius [*Phys*, p. 668, 32-669, 2] cites *Timaeus* 59 A, cf. more specifically *Timaeus* 80 A 1-2 in the application of *περίωσις* to "cupping," swallowing, projectiles, musical concord and discord, streams, thunderbolts, and loadstones [*Timaeus* 79 E 10-80 C]); in *Physics* 267 A 15-20 he rejects this explanation because in reciprocal replacement all the elements involved must move and be moved simultaneously (cf. *Timaeus* 79 B C [in the explanation of respiration] *καὶ τοῦτο ἅμα πᾶν οἷον τροχοῦ περιαγομένου γίγνεται διὰ τὸ κενὸν μηδὲν εἶναι*) and so must also stop simultaneously whereas the projectile is a single thing in continued motion the cause of which cannot be one and the same agent. Aristotle contends that, even if the original mover sets in motion, along with the projectile, something else, e. g. air, which by being moved continues to move the projectile, still all motion must cease as soon as contact with the primary mover is broken even though that mover, like the magnet (a reference to *Timaeus* 80 C), make what it moves able to move in turn,—unless one supposes (and this is his own solution) that the original mover imparts not only motion but an active power to set in motion, which latter the medium retains even when, the contact with its mover being broken, it is no longer itself in motion, the medium of the projectile, then, is a series of movers through which the power to move is transmitted in diminishing degrees until finally the mover only sets in motion and when this contact is broken the whole motion ceases (*Physics* 266 B 27-267 A 15, cf. *De Anima* 434 B 29-435 A 5, *Parva Nat* 459 A 24-B 7). Plato himself does not explain in detail his application of reciprocal replacement to projectiles, but later commentators (cf. Plutarch, *Quaest Plat* 1005 A; Simplicius, *Phys*, p. 668, 25-32) make it conform to his elaboration of the mechanism in his account of respiration

and it is of the greatest consequence to determine what sort is primary (1071 B 33-37) This objection is developed elsewhere in Aristotle's demonstration of the natural motion of simple

(*Timaeus* 79 A-E). In his criticism of that account Aristotle calls fictitious the mechanism of replacement whereby, because there is no void, the heat issuing from the mouth pushes the surrounding air about through the porous flesh into the place which it has left and this air having been heated leaves the body by the way it entered and in turn pushes the air around through the mouth into the body (*Parva Nat* 472 B 12-20, cf. *Timaeus* 79 B-C), the mechanism requires exhalation to precede inhalation, whereas, since these actions are alternate and men at death exhale, the beginning of the process must be inhalation (472 B 20-24), and, furthermore, it is strange that we are aware of respiration through the mouth but not of that through the chest which this theory assumes (472 B 29-32) (There follows here [472 B 33-473 A 2] the statement that it is strange to make inhalation an entrance of heat, for what is exhaled seems to be hot and what is inhaled cold and, when it is hot, we breathe hard because the entering breath does not cool sufficiently Although this has been assumed to belong to the criticism of Plato [e g A E Taylor, *A Commentary on Plato's Timaeus*, p 567], Michael Ephesius [*Parv Nat*, pp 121, 30-122, 7] says that it is rather a criticism of Anaxagoras Now, Plato himself makes "cooling" one of the purposes of respiration [*Timaeus* 78 E 3-5, cf 70 C 7 f], and according to *Timaeus* 79 D-E the air is exhaled because it has been heated within the body, it is cooled outside, and the inhaled air becomes hot only after entering the body [cf M. Wellmann, *Fragmentsammlung der griechischen Ärzte*, I, pp 84-5] Aristotle himself in the preceding criticism gives the same account of the theory [472 B 13. *ἐξιόντος γὰρ ἔξω τοῦ θερμοῦ διὰ τοῦ στόματος*, etc] Unless he is guilty of the crassest inconsistency, this passage cannot refer to Plato, it looks very much as if it were out of place and belonged after 472 B 5 as a further argument against Democritus, for whom according to Aristotle inhalation was the ingress of fire-atoms [cf *Crit Pres. Phil*, p 262, n 181, p 289, n 3, p. 291, n 5]) Aristotle considers respiration to be alternate *ἔλξις* and *ὦσις* (cf *Physics* 243 B 12); but he takes no cognizance of the fact that Plato s application of *περίωσις* to the phenomena of respiration, projectiles, magnetism, etc had the express purpose of banishing the notion of *ἕλξις* from physical theory (*Timaeus* 80 C, cf Strato *apud* Simplicius, *Phys*, p 663, 5-6, Galen, *De Placitis Hipp et Plat*, p 708 [Kuhn] = pp. 714-15 [Mueller]; Galen, *In Plat Timaeum Comment Frag*, XIX, pp. 25-6 [Schröder]), though he himself opposes the use of this conception to explain certain biological phenomena (*De Gen. Animal* 737 B 27-738 A 9 [cf *Crit. Pres Phil*, p 209, n. 245]) Once *ἕλξις* is banished, if the initiation of respiration is to be within the body (as Aristotle himself insists that it must be [*Parva Nat* 472 A 22-24]), exhalation must necessarily precede inhalation As for the *περίωσις* in general, it is not the *cause* of motion but at once the consequence of the absence of void in a closed universe and the cause of the continuance of the disequilibrium which is the necessary condition of all physical motion (cf Simplicius, *Phys*, pp 1351, 28-1352, 17 and see pages 448-450 *infra*).

bodies If the atoms are constantly moving one another by force, they must have a natural motion from which this motion of constraint is a deviation; and, if an infinite regress is to be avoided, the original motion must cause motion naturally and not by force. So also the disorderly motion which preceded the cosmos according to the *Timaeus* (i.e. 30 A, see note 306 *supra*), if it was a motion of constraint, implies a prior natural motion; if it was itself natural, there must already have been a cosmos, for the original movent, being in motion of itself, must set in motion naturally and the things that are moved without constraint must, by coming to rest in their proper places, constitute the order which they now have, which order is the cosmos (*De Caelo* 300 B 8-25).[307] Feeling it necessary, however, to support the charge that Plato failed to specify the

[307] In 300 B 21 22 I read τό τε γὰρ πρῶτον κινοῦν ἀνάγκη κινεῖν, αὐτὸ κινούμενον, κατὰ φύσιν . . Stocks and Allan read αὑτό with F, L, and Alexander but take κατὰ φύσιν with κινούμενον. Both the parallel of 300 B 13-14 (δεῖ τὴν πρώτην κινοῦσαν μὴ βίᾳ κινεῖν ἀλλὰ κατὰ φύσιν) and the exigencies of the argument, however, require κατὰ φύσιν to be taken with κινεῖν, for Aristotle is concerned to show that a natural motion implies both a cause the operation of which is natural (τὸ κινοῦν κατὰ φύσιν [cf *Physics* 255 A 20-24, Simplicius, *Phys.*, p. 1211, 15-20]) and a natural result (τὰ κινούμενα μὴ βίᾳ) This itself guarantees αὐτό as against the ἑαυτό of most MSS and editors, for with the latter κατὰ φύσιν could not go with κινεῖν and the point at issue, that the action of the cause on that which it moves is natural, is not advanced by the assertion that it moves itself The πρῶτον κινοῦν is here a logical deduction within the limits of the theories against which Aristotle is arguing, i. e. a precosmical disorderly motion. It has nothing to do with Aristotle's own theory of a "prime mover" (as von Arnim thinks, who, reading ἑαυτό and disregarding the polemical context, cites the passage as evidence for Aristotle's early belief in a self-moved mover [*Die Entstehung der Gotteslehre des Aristoteles*, pp 21-22]) or even with Plato's (cf. Guthrie, who also reads ἑαυτό, *Class Quart*, XXVII [1933], p. 170, n 1 and *Aristotle, On the Heavens* [Loeb Class Lib], pp xxi f.), for the question of soul is not considered here in connection with the "disorderly motion", it is exactly parallel to the πρῶτον ἠρεμοῦν in the similar argument from an infinite regress in 300 B 1 (notice also the use of τὴν πρώτην κινοῦσαν [*scil* κίνησιν] in 300 B 13).

For the subsequent lines (300 B 25-31), which apply to both the Atomists and Plato, cf. *Crit Pres Phil*, pp 192-3 Aristotle's point here is that, if in the disorderly motion the combinations which constitute natural bodies *cannot* occur, definite motions are excluded and the whole cannot be called entirely without order, if they can occur, there must be natural motions present which are involved in their formation.

primary motion, Aristotle denies (*Metaphysics* 1071 B 37-1072 A 3) that he can assert it to be what he sometimes calls the principle, the self-moved mover (cf *Phaedrus* 245 C-E, *Laws* 892 A, 896 A-D), for that, the soul, he makes contemporaneous with the created world and later than the precosmical motion (*Timaeus* 34 B-C, 30 A)

With this argument is recognized a third factor which in the Platonic theory plays the part of an ἀρχὴ κινήσεως, and the importance ascribed to this principle by Aristotle is indicated by the exhaustiveness with which he elsewhere argues against the conception of soul as the self-moved through which all else is moved, a conception which he says seems to have arisen because nothing is seen causing motion except what is itself in motion (*De Anima* 404 A 20-25) [308] He himself maintains that anything which is in motion must be moved by something else and that to suppose something to be in self-motion because it is moved as a whole and not by something outside is as if, when CD is moved by AC which is itself in motion, one should say that AD is not moved by anything simply because it is not clear which part is the movent and which the moved (*Physics* 241 B 24-33) [309] Since motion exists only as a modification of something mobile and whatever is in motion is a continuum

[308] In 404 A 21 ὅσοι λέγουσι τὴν ψυχὴν τὸ αὐτὸ κινοῦν includes both Plato and Xenocrates, whose definition of soul as ἀριθμὸς αὑτὸς αὐτὸν κινῶν is in *Topics* 140 B 2-6 distinguished from Plato's (τὸ αὐτὸ αὑτὸ κινοῦν), with which it agrees, however, in so far as it makes soul the self-moved mover (cf *De Anima* 404 B 27-30)

[309] In the text of Ross, which I follow, this is 241 B 34-44, the criticism is aimed at *Phaedrus* 245 C-E (cf especially 245 E πᾶν γὰρ σῶμα, ᾧ μὲν ἔξωθεν τὸ κινεῖσθαι, ἄψυχον, ᾧ δὲ ἔνδοθεν αὐτῷ ἐξ αὑτοῦ, ἔμψυχον, ὡς ταύτης οὔσης φύσεως ψυχῆς). In *Physics* 252 B 17-27 Aristotle offers as a possible argument for the absolute initiation of motion the apparent fact that animate beings unlike inanimate objects pass from rest to motion even without external stimulus and that what is true of the microcosm may be true of the macrocosm Of this the first part is generalized from Plato's demonstration that the soul is the source of motion (cf especially 252 B 18-23 with *Phaedrus* 245 E [quoted above]) and the second reflects Plato's argument from the soul in man to that in the universe (*Philebus* 29 D-30 B) Aristotle answers the argument by saying that the animal initiates only locomotion, that in the animal there are many motions of which the cause is the environment, and that some of these set in motion thought and conation by which the whole animal is moved (253 A 7-21, 259 B 1-20, cf *Crit. Pres Phil*, pp 180-181).

and so infinitely divisible, analysis will show that any apparent self-mover must ultimately be moved by a movent which is itself unmoved· nothing can as a whole move itself as a whole, for the same subject would then at the same time and in the same respect be both agent and patient, that is both actually and potentially the same thing; nor can anything move itself by reason either of the self-motion or of the reciprocal motion of its parts, for in the former case the original impossibility recurs and in the latter case not only would the same thing still be true but there would be no prime mover at all [810]

[810] Motion occurs in the thing moved, for of this it is the actualization induced by the movent (*Physics* 202 A 13-14), and in *Topics* 120 B 21-29 the Platonic definition of soul is attacked on the ground that motion is an accident indicating the activity or affection of a subject (see page 10 *supra*).

In *Physics* 241 B 33-242 A 15 (= 241 B 44-242 A 49, Ross) it is said that, since any apparent self-mover, being as a thing in motion divisible (cf *Physics* 234 B 10 20 and 240 B 8-241 A 26), must stop if a part of it stops moving (else the part still moving and not, as was assumed, the whole is in motion *per se* and primarily), the whole must be moved by something, for this is true of whatever is at rest because something else has stopped moving That this last principle does not apply, however, in the case of a whole and its parts appears from the fact that it would as well support the argument that the motion of the parts is dependent upon the motion of the whole

In *Physics* 257 A 33-258 A 27, after having traced back all motion to a first mover either self-moving or unmoved (257 A 25-27) Aristotle argues that any self mover involves an unmoved mover Beginning again with the infinite divisibility of anything in motion not accidentally (257 A 33-B 1), he first eliminates integral self-motion (257 B 2-13), that would require a single identical thing to be undergoing and causing the same change at the same time (cf 256 B 27-257 A 3), to have contrary attributes at once and in the same respect, since motion is the incomplete actualization of the mobile which is potentially what the movent is actually (cf 257 A 12-14 and, for the same argument against the "atoms in motion," *De Generatione* 326 B 2-5) Next he shows that the parts of the self-mover cannot move each other reciprocally (257 B 13-26), for 1) there would be no first mover, since each part would really be moving itself through an intermediary, 2) each part would be undergoing the change which it causes (cf. 257 A 7-12), 3) since the mover *must* be either unmoved or self-moved but *need not* be otherwise moved, the movement caused in one part by the other, being accidental, may be excluded, in which case there would be a part that is moved and a mover that is essentially unmoved (cf 256 B 7-14, argument 3 [257 B 20-25] occurs between arguments 1 and 2, both of which, however, assume a necessary rather than accidental relation between the parts) Finally he shows that a self-mover cannot move itself by the self-motion of one or more

As for soul, Aristotle contends that, far from being essentially the self-moving or that which is capable of self-motion,[312] it cannot have motion as an attribute at all except accidentally. Here he takes it as already proved that the movent need not be itself in motion (406 A 3-4) and argues that, having motion not accidentally but as a natural attribute (as it must if its essence is to move itself), the soul will have local motion and a natural place; that natural motion would imply natural rest and the possibility of constrained rest and motion, though what these would be in the case of soul is not easy to say even by resorting to fiction (for πλάττειν βουλομένοις, a reference to Plato's myths, cf. *Republic* 588 B 10, *Phaedrus* 246 C-D); that soul, moving

De Anima 405 B 31-406 B 15

of its parts (257 B 26-258 A 1). the self moving part, not the whole itself, would be the primary self mover (cf 242 A 5-10), but, if the whole is moved by the whole, the parts would move themselves only accidentally The only possibility of self-motion, then, is for part of the whole to be an unmoved mover while part is moved, if the whole, containing these two factors, be said to move itself, it would be moved both by itself and by the unmoved factor (258 A 1-5). An intermediate element being superfluous, the true self-mover contains these two factors only (258 A 5 18), which, if the mover is a continuum (as the moved must be), are in mutual contact, if it is not, the mover alone touches the moved (258 A 18 22, cf *De Generatione* 323 A 25-34) The whole moves itself, then, not by moving or being moved as a whole but by having two distinct factors, an unmoved mover and something moved without necessarily moving (258 A 22-27)

This elaborate refutation is anticipated by the earlier statement (*Physics* 255 A 12-18) that no continuous thing can move itself, since self-affection involves two factors, an agent and a patient, which must in every case be distinct

[312] τὸ κινοῦν ἑαυτὸ ἢ δυνάμενον κινεῖν (406 A 1-2) is a reference to the formulation in *Laws* 895 E-896 A τὴν δυναμένην αὑτὴν αὐτὴν κινεῖν κίνησιν (cf. Themistius, *De Anima*, p 14, 30-31; Philoponus, *De Anima*, p 96, 10-15) This passage of the *De Anima* supports Robin (*Idées et Nombres*, n 100, III) in taking as a reference to soul the ἄλλη οὐσία παρὰ τὰ εἴδη which in *Metaphysics* 1071 B 16-17 Aristotle says would, as an ἀρχὴ δυναμένη μεταβάλλειν, be no more adequate to account for the perpetuity of movement than would the ideas with such a principle inhering in them (see note 298 *supra*); it decisively repulses the objection to this interpretation made by Ross (*Metaphysics*, II, p 369) who says that, since the world-soul "is thought of as essentially active, the objection εἰ μὴ ἐνεργήσει, οὐκ ἔσται κίνησις would not be appropriate to it" The ἄλλη οὐσία comes nearer to the requisite principle than do the ideas as Aristotle conceives them, this certainly would not in his eyes be true of the mathematical objects to which Bonitz and Ross refer

naturally upward, downward, or in an intermediate direction, would be one of the bodies of which these are the natural motions, that, the motions of the soul being presumably of the same nature as the motions imparted thereby to the body, as the body moves locally the soul must move locally within the body[312] and might then leave and reënter it, which would imply the possibility of the resurrection of dead animals; moreover, that to deduce the soul's mobility from the fact that it can be moved incidentally even by an external object is to surrender the position that it is by its own nature mobile, for what is essentially self-moved can be moved by something else *only* incidentally but the soul, if it has any motion, is especially moved by sensible objects, so that its most characteristic motion would be incidental, and finally that the soul in moving itself is itself moved, so that, if its self-motion is not incidental, it would be in process of displacement from its own essence, since every motion is displacement of the moved *qua* moved (cf *Physics* 221 B 3, 222 B 16, 235 B 8-13, 261 A 20-21). Throughout this argument Aristotle assumes that any motion of soul must be physical (cf. 406 A 12-14). He can cite Democritus as one who asserted that the soul moves the body with the same motion as it has itself (406 B 15-25);[313] but he contends that the *Timaeus* gives the same kind of physical explanation, since there it is because the soul has been intertwined with the body that it moves the latter by being itself in motion, and in support of this interpretation he briefly summarizes the *psychogonia* of that dialogue (406 B 25-407 A 2),[314] his first criticism of which

De Anima 406 B 25-407 B 26

[312] On 406 B 2 cf Shorey, *A. J. P.*, XXII (1901), pp 152-3 In *Physics* 265 B 32-266 A 1 Aristotle contends that "those who make soul the cause of motion" also bear witness to his doctrine that locomotion is prior to all other types of movement, for they say that the principle of things in motion is that which itself moves itself but the self motion of any living being is locomotion (cf 253 A 14-15 and 259 B 6-11); the desired conclusion here also depends upon the assumption that the self moving soul has the same type of motion that it imparts to the body

[313] Cf *Crit Pres Phil*, p 303, with Aristotle's question as to how the moving atoms which constitute the soul can then cause the body to rest compare the criticisms of self-motion or motion as genus of soul in *Topics* 120 B 30-35, 123 A 15-19, 127 B 13 17 (pages 10-12 *supra*)

[314] In 406 B 26 the word φυσιολογεῖ is not meant to suggest opposition to

then is that it mistakenly makes the soul a magnitude (407 A 2-3) Pointing out that by "the soul of the universe" must be meant mind (νοῦς) and not the sensitive or appetitive soul, the motions of which are not circular,[315] Aristotle argues (407 A 3-19) that mind, if it were continuous at all, would like the objects of thought have the continuity of numerical succession and not that of a magnitude, for thought is inexplicable as the

μυθολογεῖ as Vlastos maintains (*Class Quart*, XXXIII [1939], p 73, n 8), it identifies the way in which the *Timaeus* represents the action of the soul on body with the mechanical explanation of Democritus (cf Themistius, *De Anima*, p 19, 17-19, Philoponus, *De Anima*, p 115, 22-31) and opposes it to Aristotle's own statement (406 B 24-25) that soul moves body by a kind of choice and thought The intertwining' (συμπεπλέχθαι) of soul and body (406 B 27-28) represents *Timaeus* 36 L ἡ δ' ἐκ μέσου πρὸς τὸν ἔσχατον οὐρανὸν πάντῃ διαπλακεῖσα κύκλῳ τε αὐτὸν ἔξωθεν περικαλύψασα, αὐτὴ ἐν αὐτῇ στρεφομένη, θείαν ἀρχὴν ἤρξατο ἀπαύστου καὶ ἔμφρονος βίου πρὸς τὸν σύμπαντα χρόνον (cf the similar language of 34 B) Aristotle s résumé (406 B 28 407 A 2) mentions the construction of soul from the στοιχεῖα (= *Timaeus* 35 A, cf 37 A [ἐκ τῆς ταὐτοῦ καὶ τῆς θατέρου φύσεως ἔκ τε οὐσίας τριῶν τούτων συγκραθεῖσα μοιρῶν]), its division according to harmonic ratios (= *Timaeus* 35 B-36 B, cf 37 A 4 [ἀνὰ λόγον μερισθεῖσα καὶ συνδεθεῖσα] and 36 E 6 f [λογισμοῦ δὲ μετέχουσα καὶ ἁρμονίας ψυχή]), the bending of the straight strip into a circle, and then, after the division of the single circle into two which intersect at two points, the further division of one of them into seven (= *Timaeus* 36 B 6 C 2 [where, however, the straight strip is first split lengthwise, the two are joined at their centers to form a X and then are bent into two circles] and 36 D) Aristotle had remarked that the harmonic division is meant to assure the soul of an innate perception of harmony and the universe of concordant motions (406 B 29-31, cf *Politics* 1340 B 18-19 where to those who say that the soul is harmony [refuted by Plato in *Phaedo* 92 A-95 A and Aristotle, *frag* 45] he contrasts those who say that it has harmony [cf. *Timaeus* 36 E 6 f cited above]), the end of the résumé— and this was his real reason for giving it—indicates, he says, that the revolutions of the heaven are assumed to be the motions of the soul (407 A 1-2)

[315] In *Timaeus* 34 A the demiurge, endowing the universe with the motion τῶν ἐντὰ τὴν περὶ νοῦν καὶ φρόνησιν μάλιστα οὖσαν, namely axial rotation, deprives it of the other six motions, in 90 C 7-D 1 the thoughts and revolutions of the universe are said to be 'motions akin to the divine in us" (cf 47 B 5-C 4), and in 77 B-C axial rotation is expressly denied the kind of soul that has only sensation and appetite For the disturbance of the revolutions of the soul by the motions called sensations cf 43 A-44 B, the commentators refer to this passage, to the fact that sensation is introduced subsequently to the creation of the soul and as a necessary concomitant of the incarnation of particular souls (42 A), and to the rectilinear motion of vision (45 C)

contact of an extended subject with its object.[316] He maintains, moreover, that, if thought, being the motion of mind, is rotation (cf *Timaeus* 37 A [note 316 *supra*]), which is the motion of a circle, the circle described in the *Timaeus* (see note 314 *supra*) must be identical with mind (407 A 19-22), the eternal rotation of this circle is, however, incompatible with the process of thinking (407 A 22-34): it would imply unending thought of an object, whereas all thought whether practical or theoretical has a limit in its purpose or conclusion and, at any rate, does not revert to its starting-point as does circular movement, the recurrence of the same revolution would require that the mind repeatedly think the same thing, and, finally, thought resembles a coming to rest rather than movement of any kind.[317] On the other hand (407 A 34-B 5), if the motion is not its essence, the soul would be moving contrary to nature and so being under constraint could not be happy, while its indissoluble conjunction with body (see note 314 *supra* on 406 B 27-28)

[316] Aristotle has in mind *Timaeus* 37 A (*αὐτή τε ἀνακυκλουμένη πρὸς αὑτήν, ὅταν οὐσίαν σκεδαστὴν* [1 e *μεριστὴν*, cf. 35 A 2-3] *ἔχοντός τινος ἐφάπτηται καὶ ὅταν ἀμέριστον, λέγει κινουμένη διὰ πάσης ἑαυτῆς ὅτῳ τ' ἄν τι ταὐτὸν ᾖ καὶ ὅτου ἂν ἕτερον* .) It is to this that the question in 407 A 18-19 refers. *πῶς νοήσει τὸ μεριστὸν ἀμερεῖ ἢ τὸ ἀμερὲς μεριστῷ*, Aristotle has argued that, were the mind to think the object by touching it with one of its parts, not only could the contact be neither at a point (for the mind could never traverse in thought the whole object) nor at an extended part (for a thought would be a multiple repetition of the same object) but the mind would not have to have circular motion or even magnitude, and, if thought is contact by the whole circle, what is the contact of the several parts? In either case, he then adds, thought of one of the two classes of objects mentioned by Plato in the passage above cannot be accounted for

[317] Cf *Physics* 247 B 10-11 *τῷ γὰρ ἠρεμῆσαι καὶ στῆναι τὴν διάνοιαν ἐπίστασθαι καὶ φρονεῖν* λέγομεν and Plato, *Cratylus* 437 A . *μᾶλλον ἔοικε* (*scil ἐπιστήμῃ*) *σημαίνοντι ὅτι ἵστησιν ἡμῶν ἐπὶ τοῖς πράγμασι τὴν ψυχήν* . .. In *De Anima* 434 A 16-21 Aristotle repeats that the cognitive faculty is at rest, but it furnishes the universal major premise which in the practical syllogism causes motion as an unmoved mover In 432 B 26-433 A 6 he has argued that it is not *νοῦς* which causes locomotion as theoretical it makes no judgment concerning what is to be pursued or avoided, even as contemplating such a practical object it does not straightway prompt to pursuit or avoidance, and, when it does, the subject often acts rather in accordance with desire; in general, the fact that one can have medical knowledge without practicing shows that something else must determine action according to knowledge.

must also be burdensome and is a state to be shunned according to the customary assertion that it is better for the mind to be separated from body.[318] The further burden to the soul of keeping the body in motion is a point not developed here as it is elsewhere,[319] but Aristotle does object (407 B 5-12) that the cause for the rotational motion of the heaven is obscure, for it is neither the essence of the soul, such motion being merely incidental to it, nor the body, the motion of which is rather caused by the soul, and it is not even said to be "better," though god ought for this reason to have made the soul move and move in this fashion. Finally he complains (407 B 13-26) that, whereas the relationship of agent—patient or movent—moved cannot subsist between any two things taken at random, in this as in most theories there is no consideration of the state of the body to which the soul is attached or of the cause of the connection,[320] which to him is that of the proper form and the suitable material.

[318] The last remark is usually said to be an allusion to *Phaedo* 66 B 67 B, but specific reference to that passage cannot be assumed, for the attitude there expressed is stated as formal dogma in *Laws* 828 D *κοινωνία γὰρ ψυχῇ καὶ σώματι διαλύσεως οὐκ ἔστιν ἡ κρείττον, ὡς ἐγὼ φαίην ἂν σπουδῇ λέγων* The assumption that the soul must be *μακάριαν* is taken as a reference to *Timaeus* 34 B There not the soul itself but the *οὐρανός* is called *εὐδαίμων θεός*, but it is *εὐδαίμων* because of its soul which later (36 E-37 A) as distinguished from its body is called *ἀρίστη τῶν γεννηθέντων*, cf *Politicus* 269 D, where the *πολλὰ μακάρια* which come to the *οὐρανός* from its begetter are contrasted to its corporeality (In the pseudo-Platonic *Epinomis* [981 E] the soul of the stars is called *εὐδαιμονεστάτη τε καὶ ἀρίστη*.)

[319] See Appendix VIII *infra*

[320] As if it were possible, in accordance with the Pythagorean legends, for any soul to enter any body (407 B 21-23). This has generally been understood as a reference to Pythagorean metempsychosis, but the passage is not explicit enough to require this interpretation (cf. Rathmann, *Quaestiones Pythagoreae Orphicae Empedocleae*, p 18) It is not even certain that this feature of Plato's doctrine is meant, for it is not true that in metempsychosis Plato fails to relate the nature of the various bodies to the state of the souls which enter them (cf *Timaeus* 42 B-D and 90 E-92 C, of which Aristotle adapted 91 E-92 A 4 to his own purpose in *De Part Animal* 686 A 27-687 A 7); the objection might with more justice refer to the account of the original embodiment of souls in the *Timaeus* (cf 43 A *τὰς τῆς ἀθανάτου ψυχῆς περιόδους ἐνέδουν εἰς ἐπίρρυτον σῶμα καὶ ἀνόρρυτον* and *De Anima* 407 B 15 *συνάπτουσι γὰρ καὶ τιθέασιν εἰς σῶμα τὴν ψυχήν*)

Aristotle is satisfied that his demonstration of the soul's incapacity for any save accidental motion refutes *a fortiori* the theory that it moves itself (*De Anima* 408 B 30-31, cf. 408 A 30-34). Nevertheless, he adds a detailed argument against "the most unreasonable doctrine" that the soul is self-moving number[821]. Taking "number" in the sense of an aggregate of units (see note 225 *supra*), he first remarks that, since a unit is without parts and differences, no unit can be both movent and moved (409 A 1-3, cf. the refutation of integral self-motion [*Physics* 257 B 2-13] and its use against "atoms in motion" [*De Generatione* 326 B 2-5]; see note 310 *supra*) and then argues (409 A 3-7) that the movements of such a soul must be lines, for, the soul having position, its constituent units would be points (cf. *Metaphysics* 1016 B 24-26 and 29-31, 1084 B 26-27) and it is said that the motion of a point produces a line.[822] Then, after

De Anima 408 B 32-409 B 18

[821] The doctrine of Xenocrates; cf. Xenocrates, *frags* 60 and 61 (Heinze), especially Alexander, *Topics*, pp. 493, 21-494, 16 and Themistius, *De Anima*, pp. 31, 1-5 and 32, 31-34, and Plutarch, *De Animae Proc.* 1012 D (≈ Xenocrates, *frag* 68). Aristotle has referred to this doctrine in *De Anima* 404 B 27-30; cf. also *Anal. Post.* 91 A 35-B 11 (page 33 *supra*) and *Topics* 123 A 11-14, 123 A 23-26, 140 B 2-6 (pages 12-13 *supra*).

[822] ἐπεὶ φασι κινηθεῖσαν γραμμὴν ἐπίπεδον ποιεῖν στιγμὴν δὲ γραμμήν. Philoponus (*De Anima*, p. 166, 26-28) supposes that with these words Aristotle means to cite "the opinion of geometers"; but the commentators give no specific ascription of this "fluxion" theory, which is found in the definition of line as ῥύσις στιγμῆς and of plane as ῥύσις γραμμῆς and is connected with the theory that the principle of magnitude is the point (Theon Smyrnaeus, p. 83, 11-13 and 21-24 [Hiller], probably from Eratosthenes' *Platonicus* [cf. Theon, pp. 82, 22 and 81, 17], Philo Judaeus, *De Opificio Mundi*, § 16 [I, p. 11, M.], *De Decalogo*, § 7 [II, p. 184, M.], Sextus, *Adv. Math.* VII, 99, IX, 376, and X, 281, Iamblichus, *In Nic. Arith. Introd.*, p. 57, 6-12 [Pistelli], Proclus, *In Euclidem*, p. 97, 6-17 [Friedlein]). Rodier (*Traité de l'Ame*, II, p. 140) contends that Aristotle must ascribe this doctrine to Xenocrates since otherwise the refutation deduced from it would carry no weight. Yet Xenocrates could not have subscribed to this doctrine, for he held the theory of "atomic lines" (see pages 14-16 and note 81 *supra*) and made the principles of lines matter and the δυάς and those of planes matter and the τριάς (*Metaphysics* 1090 B 20-32 [see Appendix I, page 484 *infra*]). Inasmuch as Plato denied the reality of the point and set up indivisible lines as the ἀρχὴ γραμμῆς (*Metaphysics* 992 A 20-22 [see page 128 *supra*]), he could not have subscribed to this definition of the line either (cf. Ross, *Metaphysics*, I, p. 206). That it was in fact the theory

citing a biological phenomenon supposedly irreconcilable with such a theory of soul,[328] he finally argues that the soul as number cannot be self-moving by having a motive factor consisting of one or more units while its other units are moved (409 A 10-30), the only sense in which he himself admits the

of Speusippus is indicated by a reference to it in explanation of another theory of his (Proclus, *In Euclidem*, pp 179, 22-180, 1 [Friedlein, ἡ δ τῇ γὰρ ὁμαλῇ φύσει τοῦ σημείου συγκινουμένη] which follows the lines printed by Lang as Speusippus' *frag* 30) and is proved by the evidence that he made the point, as the analogue of the unit, the principle of magnitudes (*Metaphysics* 1085 A 32-34 and B 27-29, *Topics* 108 B 7-31 [see page 131 and note 82 *supra*]; cf. Speusippus, *frag* 4, lines 40-46 and 69-71 [πρώτη γὰρ ἀρχὴ εἰς μέγεθος στιγμή, δευτέρα γραμμή, τρίτη ἐπιφάνεια, τέταρτον στερεόν] and n b the typically Speusippean analogy of unit and point as ἀρχαί expressed in the passages of Theon and Iamblichus cited above) The theory may have been held earlier than Speusippus; but there is no evidence of it, and Erich Frank's attempt to vindicate it for Archytas (*Plato und die sogenannten Pythagoreer*, note 282 [p 370], p 125, and note 363), of whom he calls Plato a loyal pupil in this, fails, since the fact that Archytas "first applied mechanical motion (κίνησις ὀργανική) to a geometrical demonstration" (Diogenes Laertius, VIII, 83; cf Eudemus, *frag* 90 [= Diels-Kranz, *Frag der Vorsok* 47 A 14]) is no indication, as Frank supposes, that he defined the line as the "fluxion of a point" but is simply the kind of geometrical manipulation for which Plato is said to have censured him and Eudoxus (cf Plutarch, *Marcellus* XIV, 5-6 and *Quaest Conviv.* 718 E-F) Speusippus himself maintained that the "generation" involved in geometrical constructions οὐ ποιητικῶς ἀλλὰ γνωστικῶς ὁρῶμεν ὡσανεὶ γιγνόμενα λαμβάνοντες τὰ ἀεὶ ὄντα, since the real objects of geometry are eternal (*frag.* 46, cf. Plato, *Republic* 527 A-B)

Aristotle, then, attempts here to refute Xenocrates with consequences deduced from a principle to which Speusippus, but not Xenocrates, subscribed In such procedure he has been seen to indulge elsewhere (see pages 130-132 and note 83 [page 134] *supra*), but his use of Speusippus is particularly forced here since Speusippus set up different principles for number, magnitude, and soul (*Metaphysics* 1028 B 21-24, 1090 B 13-20 [see Appendix V, page 510 *infra*]), among which Aristotle refuses to allow any connection, even that of ὁμοιότης which Speusippus asserted (*Metaphysics* 1075 B 37-1076 A 4; see page 58 and note 55 *supra*, and n b *Anal Post* 88 A 33 αἱ μονάδες ταῖς στιγμαῖς οὐκ ἐφαρμόττουσιν).

[328] Any subtraction from a number leaves a different number whereas plants and many animals when divided continue to live and have souls specifically the same (409 A 7-10, cf. 411 B 19-30 and 413 B 16-24) The same phenomenon is for Aristotle's doctrine of substance a difficulty which he resolves by maintaining that such beings are not truly unified but are really combinations of organisms (*Metaphysics* 1040 B 5-16, *Parva Nat.* 468 A 26-B 15, 479 A 1-7, *De Incessu Animal.* 707 A 23-B 4); this would have served Xenocrates equally well as an answer to the objection made here by Aristotle

possibility of anything self-moved (cf. *Physics* 258 A 1-27 [note 310 *supra*]). In an aggregate of units, just as in the congeries of atoms which according to Democritus is the soul, movent and moved must be distinguished, for both aggregates are quantities. Then, Aristotle contends, if in the animal the motive factor is the soul, in the number also only the movent can be the soul, and this factor cannot be a unit for it would have to be differentiated from the other units in the number and the only differentia of a monadic point is its position;[824] to admit this basis of differentiation, however, would involve either (1) distinguishing the units of the soul—which now have position in the body—and the points of the body or (2) identifying the number of the soul or the soul with the points or the number of the points in the body, in which case either (1) two points would occupy the same position, so that an infinite number might do the same, or (2) all bodies would be animate and the points (i.e. the soul) could not be separated from the bodies. Besides objecting that the affections and functions of the soul cannot be explained on the assumption that it is self-moving number (409 B 13-18, cf. 402 B 25-403 A 2), Aristotle maintains that this theory, if soul is in the body but other than the body, requires several points to occupy a single point and so is like those which, in making soul a subtile matter diffused throughout the sentient body, really require the simultaneous occupation of one place by two bodies (409 A 31-B 7) and that in causing the animal to be moved by number it is tantamount to the theory of Democritus, for in one case it must be the motion of units that moves the animal as in the other it is the motion of little spheres (409 B 7-11). In similar fashion Aristotle had sought to identify the movement of body by soul in the *Timaeus* with the mechanical propulsion of the body by the

[824] Aristotle takes it for granted that, the soul being *in* the body, the units of the number which is the soul must be points (cf. 409 A 6 ·*ἡ γὰρ στιγμὴ μονὰς ἐστι θέσιν ἔχουσα*). Alexander (*Metaph.*, p. 112, 11-13) cites the passage as saying that position is the only difference *ἐν μονάσι*, from which it could be concluded that the ascription of difference to units would *ipso facto* make them points; but against this Aristotle himself could be cited as authority for assigning to units a difference of *τάξις* without involving the local position which makes them points (see Appendix VI, pages 518-519 *infra*).

spherical atoms in the theory of Democritus (*De Anima* 406 B 15-28, page 392 and note 314 *supra*).

According to Xenocrates, however, the soul moves itself not as number but because the principle of motion is one of its constitutive factors (Xenocrates, *frag.* 68). Aristotle must have known that the principles of motion and of rest had a place in Xenocrates' theory of the soul (cf. *Topics* 127 B 13-17 [pages 11-12 *supra*]), but there is no indication of this in the present detailed refutation of the "self-moving number," which is consequently beside the point in so far as it maintains that a number as an aggregate of units cannot move itself. With regard to such a number Xenocrates might have freely admitted the contention, since he himself held his own idea-numbers to be immobile (cf. *Metaphysics* 1069 A 33-36 [line 35 = Xenocrates]); but the soul he did not represent as being simply number in either the one sense or the other, and so to this extent Aristotle's argument refutes the verbal definition rather than the doctrine for which it stands (see, however, note 366 *infra* for the real vulnerability of Xenocrates' doctrine of the "principle of motion" in the soul). The positive sense in which Xenocrates meant the soul to be "number" is not certain.[325] Aristotle says that the soul, which was called "self-

[325] The explanations extant in the ancient commentaries are mere conjectures; cf Heinze, *Xenokrates*, pp 65-6, who is mistaken, however, when he argues that Themistius did not himself know the fifth book of Xenocrates' *Physics* "since for the defense of Xenocrates he contents himself with a citation of Andronicus' interpretation," for Themistius in fact appeals to Xenocrates' *Physics* as proof that Andronicus' censure of Aristotle's interpretation is unjustified (Themistius, *De Anima*, pp 31, 1-5 and 32, 31-34) According to Merlan (*Philologus*, LXXXIX [1934], pp 204-5), Xenocrates meant that the soul is "die sich zur Gestalt erzeugende Zahl" which is "almost or perhaps completely identical" with what Speusippus meant, namely that the soul is "die zahlenmassig bestimmte Figur"; at any rate, "ἀριθμός and ἰδέα in the two definitions appear to mean about the same thing" Against this interpretation of Xenocrates as well as that of Speusippus see Appendix V (pages 509-512 *infra*) and cf Cicero, *Tusc. Disp* I, 10, 20 (Xenocrates, *frag* 67) Xenocrates animi figuram et quasi corpus negavit esse, verum numerum dixit esse According to J Moreau, who apparently accepts the explanation of Andronicus (cf *La Construction de l'Idéalisme Platonicien*, p 400, n 2), the definition is "a perfect expression of the Platonic ontology" and means that "the soul can be *represented* only in the form of *organic totality*, as an *autonomous system of relations*" (*L'Ame du Monde*,

moving" as the cause of motion, was declared to be "number" as cognitive because knowledge was generally supposed to require the similarity of subject and object and in this theory the ultimate objects of cognition are numbers[328] Xenocrates is known to have said that the soul is nourished by τὰ μαθήματα (*frag.* 66 [Nemesius, *De Nat. Hom.* § 30], a metaphor which he probably took over from Plato (cf. *Protagoras* 313 C; *Phaedo* 84 A-B; *Phaedrus* 246 E, 247 D, 248 B-C, *Republic* 441 E-442 A, *Laws* 874 D) By pressing this metaphor with literal consistency and at the same time assuming that like is nourished by like (cf *Phaedo* 96 C-D, *Timaeus* 81 A-C; Aristotle, *De Generatione* 315 B 1-6; and *Crit. Pres. Phil.*, pp. 91-3) he could have concluded that, since for him the ultimate μαθήματα are numbers, i e idea-numbers, the soul too must be a kind of number However that may have been, in the argument preserved the nourishment of the soul by the μαθήματα is adduced to prove not that the soul is number but that it is

p 52, n 3) Robin, on the other hand, asserts that number symbolizes the correlation of movement and intellection, which is the foundation of this definition (*Idees et Nombres*, p 488) This interpretation of Robin's is refuted rather than supported by the scanty evidence which bears upon the question (see Appendix IX, pages 573 571 *infra*). Moreau offers no real evidence at all for his explanation of Xenocrates' meaning, the interpretation given by Andronicus being as much without foundation as his own, it is enough to observe that Moreau's "autonomous system of relations" is utterly alien to the thought of Xenocrates who made a strict and exhaustive distinction between τὸ καθ' αὑτό and τὸ πρός τι (Xenocrates, *frag* 12) It is significant that none of these interpreters makes use of *Anal Post* 91 A 35 B 11 according to which Xenocrates sought to establish his definition of soul as self-moving number by means of the middle term τὸ αὐτὸ αὑτῷ αἴτιον τοῦ ζῆν (see page 33 *supra*), promising as this looks at first sight, we lack the one piece of information necessary to make anything of it, i e what the necessary connection was that Xenocrates saw between this term and "number"

[328] Cf *De Anima* 404 B 27-30 (ἐπεὶ δὲ καὶ κινητικὸν ἐδόκει ἡ ψυχὴ εἶναι καὶ γνωριστικὸν οὕτως, ἔνιοι συνέπλεξαν ἐξ ἀμφοῖν, ἀποφηνάμενοι τὴν ψυχὴν ἀριθμὸν κινοῦνθ' ἑαυτόν) and 409 B 11-13 (τοῖς δὴ συμπλέξασιν εἰς τὸ αὐτὸ κίνησιν καὶ ἀριθμὸν κτλ) In the former passage γνωριστικὸν οὕτως refers to the account in the preceding lines (404 B 18 27, see Appendix IX, pages 572 573 *infra*) The theory is adduced as an example in support of Aristotle's contention that "γινώσκεται τὸ ὅμοιον τῷ ὁμοίῳ" was the basis of all theories - excepting that of Anaxagoras- which were concerned with the cognitive aspect of the soul (cf 404 B 8-10, 405 B 12-21, *Crit Pres. Phil.*, p 300)

incorporeal (*frag.* 66, cited *supra*), a point which Xenocrates apparently stressed with some vigor (cf *frag.* 67) In criticizing the *Timaeus* Aristotle asserted (*De Anima* 407 A 6-10) that either νοῦς is without parts and so not a continuum (συνεχές) at all or it is continuous in a sense different from that of a magnitude He himself had just contrasted to the unity of magnitude the unity of number. Since this latter is for him, however, a unity of *succession* and since he holds that number is the contrary of continuous (*Categories* 4 B 20-31, *Metaphysics* 1020 A 7-14, *Physics* 227 A 13-23, cf. 220 B 2-3 and *De Anima* 425 A 19), the phrase, ἢ οὐχ ὡς μέγεθός τι συνεχής, appears to be a dialectical concession made to clear the way for the present refutation of the soul as magnitude, it would have been made necessary if someone had contended that the soul is a continuum without being an extended magnitude and had pointed to "number" as an example of such unextended continuity Now, according to Meletius the soul was called ἀριθμὸς συνεχής by Xenocrates, and, although Meletius' report is badly confused, this part of it was probably derived from Nemesius' refutation of Xenocrates which turns upon the continuity of number and the soul, Nemesius contending against Xenocrates that the soul is continuous but number is not (Nemesius, *De Nat. Hom.* § 44, cf Heinze, *Xenokrates*, p 66 and *frag* 63) It is, then, probable that Aristotle's concession refers to Xenocrates; and, as it is likely that Speusippus interpreted the *Timaeus* in such a way as to defend Plato against the charge of having made soul a magnitude (see Appendix V, pages 509-511 *infra*), so Xenocrates in his definition, which is also an interpretation of the *Timaeus* (see page 511 *infra*), may have called the soul number not in order to relate it to the objects of knowledge (i e the motivation which Aristotle assumes, for which see Appendix IX, pages 574-575 *infra*) but to indicate that though "continuous" it is not a magnitude. Aristotle, of course, treats the "number" in Xenocrates' definition as if it meant number in his own sense; but he should at least have admitted that by calling the soul number Xenocrates had ascribed to it a kind of unity which he himself had just contrasted to the unity of magnitude (*De Anima* 407 A 6-10) and that, since Xenocrates insisted upon the incor-

poreality of the soul, the relation of soul to body could not be such as to reduce it to corporeal magnitude nor could its self-motion have been meant to be physical motion such as that by which one body moves another.

Aristotle does seem to recognize that one might ascribe motion to the soul without meaning locomotion. At any rate, after showing that the soul cannot move locally except accidentally and before concluding generally that it is incapable of motion (see page 396 *supra*) he had considered the possible argument that the soul is said to grieve, rejoice, be emboldened, fear, grow angry, perceive, and think and that all of these are movements. To this his answer was that, even if these processes are movements and movement is caused by the soul, it does not follow that the soul is in motion, for the subject of the processes is the individual composite of soul and body, the soul being the origin or term of the movements which are not in it or of it but are local motions or alterations of the bodily organs. The processes here mentioned coincide, at least in part, with the names which Plato gives to the motions of soul (or, more strictly, the modes of the motion) whereby she moves all things in heaven, earth, and sea (*Laws* 896 E-897 B [. . . αἷς ὀνόματά ἐστιν βούλεσθαι, σκοπεῖσθαι, ἐπιμελεῖσθαι, βουλεύεσθαι, δοξάζειν ὀρθῶς ἐψευσμένως, χαίρουσαν λυπουμένην, θαρροῦσαν φοβουμένην, μισοῦσαν στέργουσαν . .]). Moreover, Plato explained sensations as motions in the soul induced by movements in the bodily organs; but between the former and the latter motions he made a distinction of kind, and in the passage of the *Laws* just cited he emphatically differentiates the essential motion of soul from any and all motions of which bodies are subject.[827] Aristotle, however, does not here consider

De Anima 408 A 34-B 30

[827] Concerning sensations cf *Philebus* 33 D-34 A; *Timaeus* 43 C, 45 D, 67 B, *Theaetetus* 186 B C, *Phaedo* 79 C; and see page 24 *supra* on *Topics* 125 B 15-19 Similarly pleasures and pains of one type are motions in the soul resulting from movements set up in the body cf *Timaeus* 64 A-65 B, *Philebus* 43 B-C; *Republic* 462 C-D, 584 C (So even 408 B 13-15 [βέλτιον γὰρ ἴσως μὴ λέγειν τὴν ψυχὴν ἐλεεῖν ἢ μανθάνειν ἢ διανοεῖσθαι, ἀλλὰ τὸν ἄνθρωπον τῇ ψυχῇ] recalls the "more correct" expression of *Theaetetus* 184 D 4 5 ἢ [*scil* τῇ ψυχῇ] διὰ τούτων οἷον ὀργάνων αἰσθανόμεθα ὅσα αἰσθητά.) The difference between motion in the soul and that through the body in sensation is indicated in *Philebus* 33 D. καὶ τινα ὥσπερ σεισμὸν ἐντιθέντα ἰδιόν τε καὶ κοινὸν ἑκατέρῳ (cf Stallbaum *ad loc*

the possibility of such distinctions Instead, he assumes that, if the processes in question are "motions," they must be either local movements or alterations (cf. 408 B 9-11) and, besides, that, if movements in the bodily organs can be associated with these processes, the appearance of the processes themselves as motions is sufficiently explained without any further motion in the soul.[328] His right to these assumptions is the more questionable since he himself at times speaks of the soul as being modified and, despite his insistence upon its immobility, even uses the term "motion" to express this modification.[329]

Aristotle began his proof of the soul's immobility by limiting

"Aliter igitur corpus, aliter animus movetur, quamquam est, quod utrique commune sit") The distinction between motions in the soul induced by sensation and the soul's own motion is graphically drawn in *Timaeus* 43 A-44 B, Plato would consequently deny that "the soul, if it has any motion, is especially moved by sensible objects," the basis of Aristotle's refutation of the hypothetical argument for the mobility of the soul at *De Anima* 406 B 5 11 (see page 392 *supra*) In *Laws* 897 A the soul's own motions, named above, are distinguished from corporeal movements as *πρωτουργοὶ κινήσεις* from *δευτερουργοί*. The motions of soul "employing as auxiliary" these movements of bodies produce growth, wasting, aggregation, segregation, and the qualities which are consequent upon these (cf Simplicius, *Phys*, p 421, 17-22)

[328] Cf. *Eth Nic.* 1173 B 7-13 where Aristotle argues that, since Plato (on *οὐ δοκεῖ δέ* cf. Shorey, *Unity*, p 46, n 329) held the soul to be the seat of pleasure (*Philebus* 55 B, cf *Republic* 583 E), he was wrong in defining pleasure as a replenishment of the natural state (*Philebus* 31 E-32 B, 42 C-D) because the subject of the replenishment is the body, not the soul. The argument depends upon its disregard of Plato's express statement that this kind of pleasure is a motion in the soul induced by a movement in the body "strong enough to cross the threshold of consciousness" (*Philebus* 43 B-C, see note 327 *supra*)

The assumption on which Aristotle argues that sensation does not involve the soul in motion is answered by Theophrastus when he says *αἱ αἰσθήσεις καίπερ ἐν τῷ πάσχειν οὖσαι δι' ἑτέρων ὁμως ἐν ψυχῇ γίνονται* (*Metaph.* 5 B 5-7).

[329] Cf *Metaphysics* 1072 A 30 (*νοῦς δὲ ὑπὸ τοῦ νοητοῦ κινεῖται*), *De Anima* 431 B 2-5 (. . . *τὸ νοητικὸν . κινεῖται*), *Parva Nat* 452 B 9-13 (*νοεῖ γὰρ τὰ μεγάλα καὶ πόρρω . . τῇ ἀνάλογον κινήσει ἔστι γὰρ ἐν αὐτῇ [scil τῇ διανοίᾳ] τὰ ὅμοια σχήματα καὶ κινήσεις*), *De Anima* 433 B 17-18 (*ἡ ὄρεξις κίνησίς τις ἡ ἐνέργεια*), *Physics* 253 A 17-18 (. . *τούτων δ' ἑνίας τὴν διάνοιαν ἢ τὴν ὄρεξιν κινεῖν . .*), *Parva Nat.* 454 A 8-10 (*ἡ δὲ λεγομένη αἴσθησις, ὡς ἐνέργεια, κίνησίς τις διὰ τοῦ σώματος τῆς ψυχῆς ἐστί*) At *De Anima* 431 A 6, having denied that sensation is an affection or alteration, Aristotle calls it *ἄλλο εἶδος κινήσεως*. Similarly at 417 B 2-16 the exercise of knowledge *ἢ οὐκ ἔστιν ἀλλοιοῦσθαι ἢ ἕτερον γένος ἀλλοιώσεως* and in learning the subject *ἢτοι οὐδὲ πάσχειν φατέον ἢ δύο τρόπους εἶναι ἀλλοιώσεως*.

the species of *κίνησις* to locomotion, alteration, growth and diminution and by drawing the inference that any essential motion of the soul must be one of these spatial motions (*De Anima* 406 A 12-16). He did bring a general defense of his assumption that the supposed motion of the soul must be locomotion,[330] but specifically he contended that the *Timaeus* treats the soul as a magnitude and its motion as circular motion in space (see pages 392-395 *supra* [*De Anima* 406 B 25-407 B 26]). It seems probable that both Speusippus and Xenocrates objected to this interpretation (see page 401 *supra*), but, however that may be, Plato clearly indicates in the *Timaeus* itself that axial rotation is, as he says unequivocally in the *Laws*, the physical manifestation or likeness of the spiritual motion of νοῦς.[331] According to the *Laws* (898 C) the unseen spiritual motion *produces* the perceptible rotation of the heavens, the

[330] *De Anima* 406 A 30-B 3, cf *Physics* 265 B 32-266 A 1 (pages 391-392 and note 312 *supra*). Aristotle's notion can be formulated as follows: that which by its own motion sets another in motion must be moving with the same type of motion as that which it moves. Cf. *Physics* 256 B 14-20 (*συμμεταβάλλει γὰρ τοῦτο* [i.e. the intermediate, moved mover] *ἅμα καὶ κατὰ τὸ αὐτὸ τῷ κινουμένῳ ὃν*) and Hicks, *De Anima*, p. 563: "For in a chain of moved movents mediating between the first cause of the system and that which is merely moved without imparting the motion to anything else the motion transmitted ought to be of the same species throughout."

[331] Cf. *Laws* 897 D-898 C where observe especially the following: *Μὴ τοίνυν ἐξ ἐναντίας οἷον εἰς ἥλιον ἀποβλέποντες, νύκτα ἐν μεσημβρίᾳ ἐπαγόμενοι, ποιησώμεθα τὴν ἀπόκρισιν* (*scil. περὶ τῆς φύσεως τῆς νοῦ κινήσεως*), *ὡς νοῦν ποτε θνητοῖς ὄμμασιν ὀψόμενοί τε καὶ γνωσόμενοι ἱκανῶς· πρὸς δὲ εἰκόνα τοῦ ἐρωτωμένου βλέποντας ἀσφαλέστερον ὁρᾶν* . "Ἢι *προσέοικεν κινήσει νοῦς τῶν δύο ἐκείνων κινήσεων, τὴν εἰκόνα λάβωμεν* . *τὸ κατὰ ταὐτὰ δήπου καὶ ὡσαύτως καὶ ἐν τῷ αὐτῷ καὶ περὶ τὰ αὐτὰ καὶ πρὸς τὰ αὐτὰ καὶ* (*καθ'?*) *ἓνα λόγον καὶ τάξιν μίαν ἄμφω κινεῖσθαι λέγοντες, νοῦν τήν τε ἐν ἑνὶ φερομένην κίνησιν, σφαίρας ἐντόρνου ἀπεικασμένα φοραῖς, οὐκ ἂν ποτε φανεῖμεν φαῦλοι δημιουργοὶ λόγῳ καλῶν εἰκόνων*.

From *Timaeus* 40 A 7-B 2 it is clear that axial rotation, which at 34 A is called *τὴν περὶ νοῦν καὶ φρόνησιν μάλιστα οὖσαν* (*κίνησιν*), is the physical result of self-consistent thought about unchanging objects (. *προσῆψεν ἑκάστῳ τὴν μὲν ἐν ταὐτῷ κατὰ ταὐτὰ* [*κίνησιν*], *περὶ τῶν αὐτῶν ἀεὶ τὰ αὐτὰ ἑαυτῷ διανοουμένῳ*); cf. Proclus, *In Tim.* 276 C-D (III, p. 121, 5-17 [Diehl]). At *Timaeus* 77 B 6-C 2 axial rotation (*στραφέντι αὐτῷ ἐν ἑαυτῷ περὶ ἑαυτόν*) is explained as *τῶν αὐτοῦ τι λογίσασθαι κατιδόντι*, and 42 C and 47 D show that the "revolutions" are symbols of λόγος or νοῦς while 37 A-C definitely describes the motions of the soul as mental activities, not physical processes, calling them *δόξαι* and *πίστεις*, *νοῦς* and *ἐπιστήμη* just as do the passages in the *Laws*.

two could not have been identified in the *Timaeus* by the thinker who in the *Republic* (529 C-D) had so sharply distinguished the movements of the visible heavens from the "true" intelligible motions Aristotle is consequently mistaken both in supposing the *psychogonia* of the *Timaeus* to be evidence that the motion of soul was *meant* to be of the same kind as that of the body which it moves (406 B 25-407 A 2) and in arguing that in any case the celestial circle *must* be identical with mind because the operations of both are represented as being the same (407 A 19-22); and upon this mistaken interpretation depends his conclusion that soul is in the *Timaeus* said to be a magnitude (407 A 2-3) [332] His whole

[332] The specific objections to representing thought as axial rotation (407 A 22-34 [page 394 *supra*]) are drawn from the nature of the intermittent and discursive thinking of the imperfect human mind That the figure implies continuous and unending thought of the same object would hardly have seemed to Plato a valid objection in the case of the world-soul, the process of which he represented by axial rotation for this very reason (*Timaeus* 40 A 7-B 2, *Laws* 898 A-B [note 331 *supra*]), or even in the case of human souls, for in them the continuously unswerving functioning of νοῦς has been made intermittent by the disturbances consequent upon embodiment and is reestablished once these disturbances are mastered or eliminated (*Timaeus* 43 A 44 B, 42 C 4 D 2, 47 B 5-C 4, 90 C 7-D 7) Plato could with justice retort that Aristotle himself makes the activity of the supreme νοῦς an eternal thinking of the same object in the same way (*Metaphysics* 1072 B 14-30, 1074 B 15-1075 A 10) and asserts that man must strive to engage in this activity as much as possible although, because he is a composite being, he can attain to it only occasionally (*Metaphysics* 1072 B 14-16 and 24 26, *Eth Nic* 1177 B 16-1178 A 8, 1178 B 21-32) These criticisms of Aristotle's only emphasize his failure to understand that by the symbol of axial rotation Plato meant to express the simultaneous aspects of motion and rest in the activity of the mind (see the description at *Laws* 893 C [*τὰ τὴν τῶν ἑστώτων ἐν μέσῳ λαμβάνοντα δύναμιν λέγεις, φήσομεν, ἐν ἑνὶ κινεῖσθαι, καθάπερ ἡ τῶν ἑστάναι λεγομένων κύκλων στρέφεται περιφορά*] to which in 898 A the motion of mind is likened and cf. *Republic* 436 D-E for the simultaneous but different aspects of rest and motion in a "sleeping" top)

Although Aristotle here insists that on Plato's theory the motion of the soul must be its essence in order that its continual rotation be not contrary to nature and so constrained (407 A 34-B 2), he does *not* raise the objection that, if rotation is the natural motion of soul, soul must be the simple body of which rotation is the natural motion, and that too despite his argument to prove the identity of mind and the celestial circle in the *Timaeus* On the other hand, when on the previous page (406 A 14 30 [pages 391 392 *supra*]) he argued that, since the motion of the self moving soul must be "natural," the soul would

criticism of the mobile soul in the *Timaeus* depends upon taking the symbol for that which it symbolizes and upon pressing the literal meaning of terms used metaphorically. Thus it is by understanding in a literal physical sense the "intertwining" of soul with body (*Timaeus* 36 E)[838] that he reduces Plato's account of the movement of body by soul to the mechanical propulsion of Democritus (*De Anima* 406 B 25-28, see note 314 *supra*); but in this interpretation he leaves out of account the "envelopment" of the corporeal universe by the incorporeal soul, which is the warning given by Plato in this very passage (*Timaeus* 36 E, cf. 34 B) against supposing

have to have a natural place in which it would naturally be at rest and that it would therefore be fire, earth, or one of the intermediate bodies, depending upon the direction of its natural motion, he did *not* mention the fact that what he calls the natural motion of the soul on this theory is axial rotation These complementary omissions are significant, and the proximity of the two passages to each other makes it difficult to believe that they were not purposeful Now, Aristotle himself assumes the existence of a body the natural motion of which is rotation and which revolves eternally without natural rest in its proper place and unsubject to constrained motion or rest contrary to its natural motion (*De Caelo* 269 A 30-B 17, 269 B 29 270 A 35, 270 B 32-271 A 33, 279 B 1-3, *Metaphysics* 1050 B 20-28) To have suggested, then, in 406 A 14-30 that the natural motion of soul is axial rotation would have been to admit either that the arguments of this section against the motion of soul are invalid or that they are equally destructive of his own doctrine of a fifth essence Once he has argued that Plato makes axial rotation the natural motion of soul, however, he could not safely object that for Plato then soul must be the simple body of which this is the natural motion, for that would not only call attention to the weakness of the earlier criticism but it would also be tantamount to objecting that Plato in fact identified soul with the fifth essence, a doctrine which bears an uncomfortably close resemblance to one aspect of Aristotle's own theory (see Appendix X, pages 598-602 *infra*).

[838] In *De Anima* 407 B 2-3 Aristotle expresses this relation by the phrase τὸ μεμίχθαι τῷ σώματι and in 429 A 24-25, where after interpreting the remarks of Anaxagoras concerning "Mind" in accordance with his own theory he says διὸ οὐδὲ μεμίχθαι εὔλογον αὐτόν (*scil* τὸν νοῦν) τῷ σώματι, an incidental criticism of the *Timaeus* is probably intended (see note 418 *infra*) According to Aristotle's strict theory, the "mixture" of soul with body would imply the corporeality of the former, and yet he allows himself the expression, "the mixture of form with matter" (*De Caelo* 277 B 32-33, 278 A 14-15). On this and on Plato's free use of the term μῖξις (e g the "mixture" of πέρας and ἄπειρον in *Philebus* 23 C-D, 27 B) see Appendix VII (especially pages 530-531, 534-536, and 537) *infra*.

soul and body to be of the same order,[334] and he does not observe that in the *Timaeus* itself (46 C-E) the intelligent causation of soul is sharply differentiated in kind from the mechanical causation of corporeal agents. Similarly, he takes what Plato calls the "contact" of the soul with the objects of mental activity (*Timaeus* 37 A) to be the *physical* contact of two divisible magnitudes and on this basis criticizes the figurative account of cognition in the *Timaeus* (*De Anima* 407 A 6-19, see note 316 *supra*). To press the literal sense of Plato's ἐφάπτεσθαι in this fashion is peculiarly inappropriate for Aristotle who himself uses the metaphor of contact to express the activity of νοῦς;[335] but of a piece with this, though more important because more subtle in its consequences, is the tacit interpretation of the μεριστή or σκεδαστή and the ἀμέριστος οὐσία as *quantitatively* divisible and indivisible being which Aristotle then naturally supposes must stand for continuous magnitude and spatial point respectively. With this interpretation it is easy for him to ring the changes on the impossibility of correlating the cognizing subject, regarded in its effective aspect as being of one class or the other, with the objects which belong to both classes. In the *Timaeus* itself, however, the objects which have οὐσία σκεδαστή are identified as τὰ γιγνόμενα, those that have οὐσία ἀμέριστος as τὰ κατὰ ταὐτὰ ἔχοντα ἀεί (cf. 37 B 2-3 with 37 A 5-6). By "indivisible being," then, Plato meant the

[334] This "paradox" is of the same kind and has the same purpose as that of 40 A according to which the demiurge "places the stars into the intelligence of the supreme," i e fits the bodies into the motion instead of giving the motion as an attribute of the bodies (cf also 38 C). It is part of the same "paradox" that Plato speaks of the rotation of the world and of the world-soul before the creation of the stars and planets, although the only physical rotation is that of these freely moving bodies (see Appendix VIII, page 555 *infra*).

[335] Cf *Metaphysics* 1051 B 22-26 and 1072 B 20 21. With obvious reference to the first of these passages Theophrastus (*Metaph.* 9 B 13-16) uses the same metaphorical explanation.

In *Parva Nat* 452 B 9-11 (*νοεῖ γὰρ τὰ μεγάλα καὶ πόρρω αὐ τῷ ἀποτείνειν ἐκεῖ τὴν διάνοιαν ὥσπερ τὴν ὄψιν φασί τινες*), although Aristotle does not say that anyone really gave the explanation repudiated, the reference to Plato's theory of vision, which had been criticized in *Parva Nat* 437 B 9 23 and 438 A 25-B 2, may indicate that he intended this "reaching out" of thought to its object to be understood as logically implied in what he considered to be Plato's explanation of thought as physical contact.

unique, incomposite, and indissoluble idea of being, the being in which all the ideas communicate (cf. *Sophist* 256 E-257 A), by "divisible being" the scattered reflections of this unique idea in the medium of space, which "dispersed being" is in fact "becoming," the only kind of being that phenomena as such can have (cf. *Timaeus* 52 C). Furthermore, while all the objects of mental activity fall into one of these two classes, the soul itself belongs to neither. When Aristotle says that in the *Timaeus* Plato constructs the soul of the elements because like is known by like and the objects consist of the ultimate principles (*De Anima* 404 B 16-18, 406 B 28-31), there can be no doubt that he refers to the "blending of identity, difference, and being in the composition of the soul";[886] but he fails to observe that these three ingredients are not identical with either the "indivisible" or the "dispersed" being, identity, and difference, the two kinds which are constituents of the two

[886] *Timaeus* 37 A, see note 314 *supra*. Robin, *Idées et Nombres*, p 481, referring to *De Anima* 406 B 26-407 A 2, says "l'Ame a été constituée avec les Elements, c'est à-dire sans doute avec l'Un et l'Infini ou la Dyade de l'Inégal" . (cf also *op cit*, p 485 [§ 223]). Both in this passage and in 404 B 16 18, however, Aristotle refers *explicitly* to the *Timaeus* where no such principles or elements are mentioned, and it is not permissible to infer from 404 B 18-21 and 404 B 21-27, as Robin does (*op cit*., n 273, III and n. 274, cf. *idem*, *Platon*, p 145), that in 404 B 16-18 he is thinking of any other "elements" than those named in the *Timaeus* This would still be true, even if for the purposes of his own argument he were seeking to indicate that the "elements" of all three expositions are fundamentally the same (n b 404 B 18-19, ὁμοίως δὲ καὶ ἐν τοῖς περὶ φιλοσοφίας λεγομένοις . and 404 B 21-22· ἔτι δὲ καὶ ἄλλως . .) In that case, however, one should in consistency have to maintain that by τὸν αὐτὸν δὲ τρόπον which introduces 404 B 16-18 he meant to assert the identity of the constitutive principles of soul in the *Timaeus* with those which he has just ascribed to the theory of Empedocles; and such an interpretation would obviously be false At 404 B 30-31 Aristotle himself says of the various theories διαφέρονται δὲ περὶ τῶν ἀρχῶν, τίνες καὶ πόσαι . . , and the only common characteristic which he is here concerned to claim for the various expositions just cited is the identification of the soul in each case with the principles of the universe which that theory posited, an identification which in all the different cases was, he contends, necessitated by the notion that like is known by like (see note 326 *supra*). In the present note 404 B 19-21 and 404 B 21-27 are referred to as separate expositions in order not to prejudice the investigation of the meaning of these passages and their relation to each other which will be undertaken in Appendix IX (especially pages 574-575 *infra*).

different classes of objects respectively The words at *Timaeus* 37 A briefly resume the account given at 35 A-B, where Plato explains that the being, identity, and difference of which soul is blended are of a third kind intermediate between the indivisible and the divisible kinds in each of the three cases [887] Aristotle's disregard of this "intermediacy" of soul [888] has resulted

[887] For the obviously correct construction of *Timaeus* 35 A, a passage widely misunderstood both in antiquity and in modern times, cf Grube, *Class Phil.*, XXVII (1932), pp 80-82, who, followed by Cornford (*Plato's Cosmology*, pp 59-61), points out that Proclus construed the passage correctly The meaning of *ἀμέριστος* and *σκεδαστή* or *περὶ τὰ σώματα γιγνομένη μεριστὴ οὐσία* was correctly explained by Shorey (*A J P*, X [1889], p 52), who called attention particularly to the contrast of *τὸ περὶ τὸ σῶμα καλόν* of *Symposium* 210 C and the *καλόν* of *Symposium* 211 A-B which is *αὐτὸ καθ' αὑτὸ μεθ' αὑτοῦ μονοειδὲς ἀεὶ ὄν* (cf for the collocation of *μονοειδές* and *ἀμέριστον* *Theaetetus* 205 C-D) and to *Philebus* 15 B . *πῶς αὖ ταύτας* (*scil.* *μονάδας*), *μίαν ἑκάστην οὖσαν ἀεὶ τὴν αὐτὴν* . , *ὅμως εἶναι βεβαιότατα μίαν ταύτην μετὰ δὲ τοῦτ' ἐν τοῖς γιγνομένοις αὖ καὶ ἀπείροις εἴτε διεσπασμένην καὶ πολλὰ γεγονυῖαν θετέον εἴθ' ὅλην αὐτὴν αὑτῆς χωρίς* . (cf *Parmenides* 144 B-E and see pages 374-376 and note 128 *supra*) Shorey also saw (*loc cit*) that the *ταὐτόν* and *ἕτερον* of this passage of the *Timaeus* are "primarily" the sameness and difference discussed in the *Sophist*, but his uncertainty about the structure of the sentence (*op. cit*, pp. 53-54) precluded a precisely correct interpretation of the *psychogonia* Correctly construed, the passage assumes, on the one hand, an indivisible "same" and an indivisible "other" parallel to the indivisible "being" and, on the other hand, a divisible "same" and a divisible "other" parallel to the divisible "being" The first three are clearly the ideas of sameness, otherness, and being which figure in the discussion of the intercommunication of ideas at *Sophist* 254 D-259 D, the second three are the "dispersions" or, in other words, the *μιμήματα* of these ideas in space (cf *Timaeus* 52 A-C) Between each of these three pairs the demiurge constructs an intermediate, a *third kind* of being, sameness, and otherness, and it is *these three intermediates* which are blended into a unity to form the soul It should be observed, moreover, that the preliminary "blending" of a third kind of being (*τρίτον οὐσίας εἶδος*) between the indivisible and divisible being—and so of a third kind of sameness and difference between their indivisible and divisible kinds—is simply the Platonic figure expressing the construction of a mean between two extremes (see note 33 *supra* on *De Generatione* 330 B 15-17 and Simplicius, *De Anima*, p. 259, 11-27) Grube (*op cit*, p 81) remarks "that the first components are not used up in the mixing, whereas the whole of the intermediates go to make the world-soul" This really means that neither of the extremes is *in* the "composition" but the soul is a unity of various factors, each of which is a mean between the extremes of the ideal and the phenomenal. See further note 339 *infra*

[888] See Appendix IX *infra*.

in a fundamental misunderstanding or misrepresentation of Plato's theory, with the inevitable consequence that his criticism of the theory is largely irrelevant. In the first place, soul or its constitutive factors are not identical with the "cosmological principles" in the *Timaeus*, and the axiom that "like is known by like" could not have been the motive which determined the character of the *psychogonia*, at any rate not in the sense in which Aristotle ascribes it without discrimination to Plato and Empedocles alike (see note 336 *supra*; for the interpretation of Empedocles cf. *Crit. Pres. Phil.*, pp 293-5). Not only is the axiom not given in the *Timaeus* as the reason for the constitution of the soul there described (cf. Zeller, *Plat. Stud.*, pp. 213-15), but both ideal being and phenomenal becoming are apprehended by a subject which is neither the one nor the other but a mean between the two;[339] and Aristotle himself, when

[339] In *Timaeus* 37 A C the soul is said to apprehend the sensible by means of "the circle of the different" and the rational by means of "the circle of the same", and this has been cited as evidence that the *psychogonia* is based on the principle of the knowledge of like by like (cf. e g Brochard and Dauriac in Brochard's *Etudes de Philosophie Ancienne*, pp 100-101) Each circle, however, reports both identity and difference among its own objects; nor can "the circle of the different" be identified with "divisible being" and "the circle of the same" with "indivisible being," for the constitution of the two circles is identical The blending of intermediate being, identity, and difference in 35 A resulted in a single, homogeneous entity, each part of which contained all the three constituents equally (35 B). This homogeneous entity was divided in two and bent into two circles (36 B), called "the circle of the same" and "the circle of the other" (36 C), but these names refer to the different directions of revolution or the different functions of the two circles and not to the nature of the constituents of either Zeller (*Phil Griech*, II, 1, p 770, note and p 776, n 1) saw that "the same" and "the other" in the *psychogonia* are not to be identified with the circles in 37 A-C and interpreted by means of such an identification; but this confusion continues in various forms cf e g Rodier, *Traité de l'Ame*, II, p 97, Robin, *La Place de la Physique dans la Philosophie de Platon*, pp 51-6 (where first the three constituents of soul are said to be indivisible essence, divisible essence, and essence which is a combination of these two [cf. *La Théorie Platonicienne de l'Amour*, p 160] and then "same" and "other" are said to have been substituted for "indivisible" and "divisible"), L. Rougier, *Archiv für Gesch der Philos.*, XXVII (1914), pp 314-15

If the report of Plutarch is correct (*De An Proc.* 1012 F-1013 A = Crantor, *frag* 4 [Mullach]), Crantor, who took as the foundation of the *psychogonia* the axiom that like is known by like, though he did not identify "the same" and

he comes to refute the theories which according to him identify soul with the cosmological principles in order that it may apprehend all things, directs most of his specific arguments against Empedocles but does not mention Plato at all and seems not even to have him particularly in mind (*De Anima* 409 B 23-410 B 15, 411 A 2-7 [cf. *Crit. Pres. Phil*, pp 304-8]). In the second place—and more important—, the soul is not a quantum the relation of which to any object can be only physical contact either at a point or at an extended surface. On the contrary, Plato's description of soul as intermediate between "indivisible" and "divisible" being signifies that it is neither an idea nor the particularization of an idea and so not an extended magnitude though capable of being present to such a magnitude as it is also capable of being in relation to the ideas. Aristotle's criticism of the moving soul in the *Timaeus* has no validity, however, if he is mistaken in his basic contention that soul is there meant to be a magnitude the motion of which is rotation in space

Furthermore, Aristotle's refutation of the possibility of self-motion is open to the same objection, for his arguments are based on the assumption that any self-mover would have to be a continuous magnitude of which motion is a modification or accident, because any self-mover is a thing moved—even though moved by itself (see pages 389-390 and note 310 *supra*; cf. also *Physics* 258 B 24-26 and observe how in *De Anima* 409 A 10-15 movent and moved are distinguished in "self-moving number" on the ground that it is a quantity [see page 398 *supra*]). Such arguments do not touch Plato's self-moving soul, since it is not a magnitude and is not a substrate distinguishable from the motion which affects it but is identical with its motion In verbal strictness, that is, it is not "a thing which causes motion in itself" but is just "self-moving motion" (ἡ αὐτὴν κινοῦσα κίνησις, cf. *Laws* 894 B-C, 895 A-B), for this is the definition of that reality of which "soul" is the common appellation (*Laws* 895 E-896 A) It is consequently only by means of an illegitimate analysis based upon analogy with "things in

"the other" with indivisible and divisible being, also failed to observe the intermediacy of the constituents of soul in Plato's exposition

motion" that Aristotle can treat soul as the subject of this motion and argue that, since it *is moved* and moved essentially, "the soul which moves itself" would be in process of displacement from its own essence (*De Anima* 406 B 11-15, page 392 *supra*). It has been observed that a similar analysis into substrate and accident was one of his methods of attacking the unitary ideas (pages 39-42, 316-318 *supra*). To be sure, if it be granted that motion can exist only in a subject which is being moved (*Physics* 202 A 13-14) and that such a subject must be quantitatively divisible (*Physics* 240 B 8-241 A 26), there can be no true self-mover and no soul can be in motion; but these very premises of Aristotle's demonstration only emphasize the fact that it restricts itself to refuting the possibility of a corporeal self-mover or of a soul in physical motion (cf. Simplicius, *Phys.*, p. 964, 23-29). Plato himself, however, differentiated the self-motion identified with soul from all the physical motions in which bodies are involved; all spatial motion, locomotion and alteration as well as generation and destruction, he declared to be derivative from this immaterial self-motion which, being the ultimate cause of all physical motions, is itself supraphysical and is neither attributive nor reducible to any other terms.[340] The difference between Plato and Aristotle is not, however, merely a matter of terminology as Simplicius thinks (*Phys*, pp. 1248, 29-1249, 17) even though he is right in pointing out that the former denied to soul the physical changes to which the latter restricted the term κίνησις (cf. *De Anima* 406 A 10-14 and *Laws* 893 B-894 C cited by Simplicius) while the latter ascribed "activity" to soul and even spoke at times of its modification as "motion" (see note 329 *supra*) The real point at issue regarding the "self-mover" is whether there must be such supraphysical motion or there is neither need nor possibility of such a cause for physical movements Aristotle's principle that motion can exist only in

[340] Cf. *Laws* 896 E-897 B (see note 327 *supra*) and 896 A-D (n. b. that the characteristics of soul, which are the modes of this self-motion, are prior to the dimensions of body [896 C 9-D 3] which is the subject of ἡ δι' ἕτερον ἐν ἄλλῳ γιγνομένη κίνησις [896 B 4-8]) Cf also Moreau, *L'Ame du Monde*, § 30, pp 65-7 On the attempts to find within soul a principle of its self-motion see note 366 *infra*.

something mobile is a corollary of his definition of motion as the actualization of the potential *qua* potential, and this definition itself implies that all motion can and must be analyzed into the factors of matter and form since it is just the process of the realization of the latter in the former.[841] Plato, on the other hand, considered motion to be irreducible to factors other than motion. A thing may be moved by other moving things; but the ultimate cause of its being moved cannot be the motion of any *thing*, since that too must have been induced by some other motion, and consequently, as it must be motion of some kind, it can only be supraphysical self-motion This is primary motion, then, and all the motions of moving things are secondary.[842] That this primary motion is soul is established by the observation that where we see motion initiated in a body but not by another moving body we ascribe the initiation of this motion to the "life" of the body and this attribute "life" we ascribe to any body which we say has soul.[843]

Since self-motion is the definition of the soul's being, the motion of soul cannot be regarded as "contrary to nature" and so a motion of constraint (*De Anima* 407 A 34-B 2 [page 394 and note 332 *supra*]). In fact, Aristotle's distinction of natural and constrained motion, which is connected with his general analysis by the explanation of natural motion to proper place as movement of a simple body to its own form or actu-

[841] *Physics* 202 A 13-14, 201 A 9-B 15, *Metaphysics* 1066 A 26-28, 1065 B 14-1066 A 7, see also page 384 *supra*. For the analysis of motion cf Werner, *Aristote et l'Idéalisme Platonicien*, pp 188-190 Observe also how Aristotle demonstrates that there can be no motion of motion by showing that it will not yield to analysis into substrate and form because motion is itself the change of a substrate from one form to another (*Physics* 225 B 13-24 [the text of Ross, cf his notes *ad loc.*]).

[842] *Laws* 894 E 4-895 A 3, cf. Demos, *The Philosophy of Plato*, pp 79 and 96 For self-motion as primary and the transmitted motion of moving things (i e. ἡ δὲ ἕτερον ἐν ἄλλῳ γιγνομένη κίνησις [*Laws* 896 B 4-5]) as secondary cf *Laws* 895 B, 897 A, and *Timaeus* 46 C-E

[843] *Laws* 895 C-896 A, *Phaedrus* 245 E For the exact correspondence of the concise statement of the *Phaedrus* with the detailed exposition of the *Laws*, with the result that the latter reads like a commentary on the former, cf. Stenzel, *Über zwei Begriffe der platonischen Mystik*, pp 14-15, and *ibid*, p 16, n. 1 against Natorp's contention (*Platos Ideenlehre*, p. 86) that the *Phaedrus*, contrary to the *Laws*, ascribes physical motion to the soul

ality (*De Caelo* 310 A 31-34, 311 A 1-9; *Physics* 255 A 28-30, 255 B 11-12), is inapplicable to Plato's theory, in which, if such a distinction is to be made at all, the soul, that is the self-motion that sets things in motion, must alone be called "natural" (cf *Laws* 892 C [see pages 250-251 *supra*]) while motion of constraint or necessity is that induced in one body by another which moves because it is itself moved by something else (*Timaeus* 46 E [ὑπ' ἄλλων μὲν κινουμένων ἕτερα δὲ ἐξ ἀνάγκης κινούντων], *Laws* 899 A [ὠθεῖ βίᾳ σώματι σῶμα, in contrast to the direct movement of body by soul whether immanent or not]). The motion imparted to the heavenly bodies by the world-soul would not, then, be a motion of constraint either Aristotle's contention that Plato's account would condemn the soul to incessant toil (*De Caelo* 284 A 18-35 [Appendix VIII, pages 540-541 *infra*]) results from considering the rectilinear motions of the simple bodies of our environment to be the directions of their actualization: a force moving these bodies in a circle would have constantly to overcome the resistance of their "natural" tendency to move toward their actuality and to rest there. Aristotle himself concludes that the heavenly bodies must consist of a material other than any of those in our environment and one to which circular motion is "natural."[344] For Plato, however, body does not have a natural tendency to move toward its own actuality which would resist or be hindered by the soul causing it to move in a circle; the only natural motion of any body is the motion directly caused by soul and any such motion is natural, since to Plato it is "natural" for body to be governed by soul, which is the principle of motion (*Laws* 896 C 2-3)

The literalism which characterizes Aristotle's interpretation and criticism of soul in the *Timaeus* also accounts for his further contention that Plato cannot make self-moving soul the principle of motion anyway since he describes soul as created along with the cosmos and assumes a precosmical motion which is consequently prior to soul (*Metaphysics* 1071 B 37-1072 A 3 [pages 388-389 *supra*]; cf. *De Caelo* 300 B 16-18). Aristotle had apparently assumed that the account of creation in the

[344] See Appendix X *infra*.

Timaeus was meant quite literally when in the περὶ φιλοσοφίας he insisted that the universe was both ungenerated and indestructible (*frags.* 18 and 22, see pages 592-593 *infra*) In the *De Caelo* he states that all his predecessors held the universe to be generated though some among them said that, having come into existence, it is eternal (279 B 12-13); and he cites the *Timaeus* for this doctrine that the universe has come to be but will nevertheless exist for all remaining time (280 A 28-32; cf. *Timaeus* 38 C 2-3).[845] Against such a conception he first maintains that observation shows all γιγνόμενα to be also φθειρόμενα and that, while the universe could not have come to be if the elements which constituted it were incapable of change, if it did come to be it must have done so by a change in the previous state of its present constituents, which constituents must therefore be capable of change so that the present constitution of the universe can change and the universe is not indestructible Then, after proving the mutual implication of ἄφθαρτον and ἀγένητον, on the one hand, and of γενητόν and φθαρτόν, on the other (282 B 5-283 A 4), he employs this conclusion and the discussion of terms which precedes it (280 B 1-282 B 5) for the "logical" refutation which he had promised (280 A 32-34) and which may be summarized as follows· A generated indestructible would exist for a time *unlimited in one direction*; but the unlimited in one direction is *neither* finite *nor* infinite (infinite time meaning time than which there is none longer), whereas everything has the capacity of being or not being for *either* a finite *or* an infinite time (283 A 4-10). Such a thing would have the potentiality of being for an unlimited time before the moment of its generation and the potentiality of not being for an unlimited time thereafter, so that, assuming the actualization of the poten-

De Caelo 279 B 17-31

De Caelo 283 A 4-B 22

[845] From 280 A 28-30 it might appear that Aristotle ascribes to the *Timaeus* the notion that the ungenerated may be perishable as well as that the generated may be imperishable, cf Simplicius, *De Caelo*, pp 311, 21-312, 6, whose own explanation, p 312, 1-6, is undoubtedly correct For Aristotle's use of ἀΐδιον in the passages under discussion and his neglect of Plato's distinction between "eternal" and "everlasting" in the sense of temporal duration see note 126 *supra*.

tialities, it would have both opposites at once (283 A 11-17; cf. 281 B 18-25); even without the assumed actualization it would have both the potentialities of being and of not being at every moment and so for infinite time (283 A 17-20, cf. 281 A 28-B 2, 281 B 32-33); and, having before its generation the potency which precedes actuality, it would while non-existent have the potentiality of being both then and later and so would have it for infinite time (283 A 20-24) [346] If anything generated were indestructible, it could be so only naturally and not by chance, but natural entities have a single potentiality of opposites, their matter being the cause of their being and not being, so that the single matter of a generated indestructible would be for an unlimited time actually non-existent and actually existent, which means that opposite states would be simultaneously actual in it (283 A 29-B 6). An eternal which once did not exist must have the potentiality of not being in the past only, which is impossible because potentiality is only of the present or the future (283 B 6-17). Finally, to these "logical" arguments is added the material of another physical refutation: the generated is alterable, alteration is by means of contraries, and natural entities are destroyed by the same elements of which they are constituted (283 B 17-22); i.e. what is generated must have come to be by alteration from a contrary and so is destructible by alteration into its contrary.[347]

[346] At this point Aristotle inserts the argument that anything destructible must sometime be destroyed, since otherwise it would be at once capable of always being and not always being (283 A 24-29; cf. 282 A 22-25) This may be a criticism of *Timaeus* 41 A-B, where the demiurge says that his handiwork though not absolutely indissoluble shall by his will be maintained undissolved (cf. Simplicius, *De Caelo*, p 351, 15-22)

[347] With regard to this last argument it should be recalled that in *Timaeus* 32 C 33 A the demiurge is said to have made the universe consist of all the fire, water, air, and earth, "leaving no part or power of any of them outside," and to have done this in order that it might be whole and complete, unique, and untouched by age or illness If the passage in Philo, *De Aeternitate Mundi*, §§ 20 24 (= Aristotle, *frag* 19) really comes from the περὶ φιλοσοφίας, Aristotle used this argument of the *Timaeus* in that dialogue. At any rate, in *De Caelo* 277 B 26-278 B 8 it is the argument that this universe contains all the matter there is (that it *must* do so is established by the doctrine of proper place and natural motion [278 B 8-279 A 11]) which proves that there can be only one universe in spite of the fact that this universe, being a particular, is not the

Aristotle's "logical" refutation depends, as does his whole case, upon taking "generated" (γενητόν) to mean that which at some previous time did not exist (*De Caelo* 280 B 14-16) or that which at some previous time may not have existed (281 B 28-29), that, at any rate, for which there must be a time either actually or potentially when it was not (282 B 17-20). According to the *Timaeus*, however, there was no time when the universe was not; it has been, is, and will be throughout all time (38 C 2-3), so that there could have been no time *before* the universe as there could be none *after* it, were it to be destroyed (38 B 6-7), for time is produced by the revolution of the heavenly bodies (38 E, 39 B-E)

This Aristotle apparently interpreted as identification of time and celestial motion, for it is pretty certainly Plato to whom he refers when he says that "some" define time as the motion of the universe[848] and to this definition objects 1) that part of the revolution is "a time," though it is not a revolution, and 2) that, if there were several

Physics 218 A 33-B 5

same as the form of universe so that it might seem possible for there to be several universes inasmuch as there are or may be many particulars with the same form whether there are separate ideas, as some say, or not. The reference to the ideas here in 278 A 10 22 was supposed by some Platonists as well as by Alexander to be a criticism of *Timaeus* 31 A 8-B 3 (cf Simplicius, *De Caelo*, p 276, 10-29) That passage they took to mean that there *can* be only one universe because the model is unique, but it pretends to no such proof (cf Cornford, *Plato's Cosmology*, p 43, top) nor does Aristotle so interpret it, his use of the notion in *Timaeus* 32 C-33 A for his own proof of the uniqueness and completeness of the universe indicating rather that he took *this* passage to be Plato's proof also although Plato did not show, as he does, why there cannot be any body outside of the single universe On the other hand, the mention here of the theory of ideas along with the theory of immanent form does not mean, as Jaeger supposes (*Aristoteles*, p. 317, n 1), that at this time Aristotle thought of the two as equally justifiable possibilities, the classification of the "universe" and "man" along with γρυπότης as entities ὧν ἡ οὐσία ἐν ὑποκειμένῃ τινὶ ὕλῃ (278 A 28-B 8) is enough to prove that he did not, for this conception is one of his favorite weapons with which to refute the theory of ideas (see pages 326 328 and note 232 *supra*).

[848] The definition was ascribed to Plato by Theophrastus and Eudemus (Simplicius, *Phys.*, p 700, 18-19, cf Aetius, I, 21, 2 and 22, 1), the latter of whom is recorded as arguing that it is inconsistent with his assumption of precosmical disorderly motion (*Timaeus* 30 A), since all motion is in time (Simplicius, *Phys.*, p 702, 24 29 = Eudemus, *frag.* 46).

universes, there would according to this definition be many simultaneous times. Later, when he maintains that time must be measured by uniform, circular motion, he refers again to this definition explaining that it was motivated by the fact that time and other motions are measured by the motion of the celestial sphere (223 B 21-23). As Simplicius rightly observes (*Phys.*, p. 703, 9-26), this conception was ascribed to Plato on the strength of *Timaeus* 39 B-D where it is said that the circuit of "the single and most intelligent revolution" is the clearest unit of measurement for the relative speed of the eight celestial revolutions but, although only this circuit and those of the sun and the moon have been generally observed and named, the "wandering" of every planet is a time and the perfect number of time is the sum of diurnal revolutions in which all the heavenly bodies regain their relative positions. This, however, is not to *identify* time and the motion of the sphere. Time is a numerical procession (37 D 6-7), that is a numerical recurrence (38 A 7-8); and the heavenly bodies "produce" time in the sense that their revolutions provide the units which make it possible to number or measure motion or change. The units which men have named and used are the revolutions called day-and-night, month, and year, which are thus "parts" of time (37 E); but the unnamed periods of the other planets are "times" in the same sense, i. e. units or "parts" of time, and the perfect unit of time is the circuit which includes all these circuits or "times." These are the "numbers of time" which the heavenly bodies distinguish and preserve; and by this "distinction and preservation" they maintain the temporal process (38 C 3-6).[849]

Physics 223 A 33-B 23

[849] There is in all this no suggestion of many "time-systems" or of "multiple times" (Taylor, *A Commentary on Plato's Timaeus*, p. 689, Guitton, *Le Temps et l'Éternité chez Plotin et St Augustin*, p. 4, n 1, Rivaud, *Timée*, p 151, n. 1) but only of different units of temporal measurement. *Timaeus* 39 D 1 means neither that the "wandering" of the planets *is* time (Vlastos, *Class. Quart*, XXXIII [1939], p. 76) nor that "chaque astre a un temps special" (Rivaud, *loc cit.*) but that the period of each planet is a temporal unit, as explained in the text above (cf. Taylor, *op cit.*, pp 215-16) The moon and other planets are ὄργανα χρόνου (42 D 5) and they distinguish and preserve ἀριθμοὺς χρόνου (38 C 6), both of which passages show that ὄργανα χρόνων in 41 E 5 is a false reading for ὄργανα χρόνου (cf. Burnet's apparatus *ad loc.*).

The form in which Plato presents his account of time, however, only causes Aristotle to treat it in the same way as he treats the cosmology. "So time has come to be together with the universe," the *Timaeus* says (38 B 6), thus recapitulating the section (37 C-38 B) in which the difference between eternity and time is explained and it is declared that the demiurge διακοσμῶν ἅμα οὐρανόν made of eternity, which abides in unity, an eternal image,[860] which proceeds according to number and which we have named "time" Consequently Aristotle states that, while all other philosophers agree in considering time to be ungenerated, Plato generates it, for he makes it simultaneous with the universe which he describes as having come to be; and to this Aristotle's reply is that time must be unlimited in both directions because it implies the instant which is a kind of intermediate, being at once the beginning of future and the end of past time, so that the extremity of any ultimate time assumed must be such an intermediate between future and past time. This notion that the instant is intermediate between past and future time and that every moment throughout the whole existence of a temporal entity is such a present instant must have been familiar to Plato, however, for he used it in his dialectical

Physics 251 B 14-16

[860] Since in this very sentence Plato says that the copy could not be αἰώνιος as the model is (37 D 3-4), it appears to be an undisguised self-contradiction to call time an αἰώνιον εἰκόνα, "eternal image" (37 D 7), and Cornford's suggested emendation, ἀέναον εἰκόνα, "ever-flowing image," seems very plausible Nevertheless, there is no variant in the MS tradition or, so far as I have observed, in the ancient quotations, and, if Plato did write αἰώνιον here, we must suppose that he did so with full consciousness of the apparent self-contradiction and consequently with the intention of putting special emphasis upon some characteristic of time which the form of his exposition is inadequate to describe The most obvious characteristic of this kind would be unlimited duration, i e. duration without beginning as well as without end (cf. Mondolfo, *L'Infinito nel Pensiero dei Greci*, p 69), for this Plato could not have stated openly without either breaking through the form into which the *Timaeus* is cast or leaving clearly implied what he certainly did not believe, namely that the universe had been created "in time." A Levi takes the phrase in question to be one of the certain indications that Plato did not believe the universe to have a beginning (*Il Concetto del Tempo . nella Filosofia di Platone*, p 108) One must reckon with the possibility that Xenocrates' use of ἀΐδιον in his definition of time (*frag* 40, note 126 *supra*) was determined by the paradoxical αἰώνιον in this passage.

critique of the Parmenidean One (*Parmenides* 152 B-E, n. b. B 2-5 and D 8-E 3), it is consequently unlikely that he was himself unaware of the argument which Aristotle uses against a beginning of time. It is especially striking, moreover, that Aristotle says nothing of Plato's distinction between eternity and time and his description of the latter as an image of the former. Yet the notion of recurrence according to number as the manifestation in motion of abiding unity is the essential and fruitful kernel of Plato's conception of time; and, when in this connection he declares that the universe by reason of its temporality imitates the eternality of its model (*Timaeus* 39 D 7-E 2, cf. 38 B 8-C 1, 37 C 8-D 1), it appears that time, which thus makes becoming a "likeness" of eternal being, must be intended to have the further characteristic of unlimited duration. That this was Plato's intention is supported by the initial classification of the *Timaeus* (27 D-28 A), where the sensible world as over against τὸ ὂν ἀεὶ γένεσιν δὲ οὐκ ἔχον (cf. the "eternal being" of 37 E-38 A) is τὸ γιγνόμενον μὲν ἀεὶ ὂν δὲ οὐδέποτε,[851] and must be taken to be practically certain if αἰώνιον εἰκόνα at 37 D 7 be accepted as authentic (see note 350 *supra*). It might be thought that Aristotle disregarded what is really essential in Plato's theory of time because of the "mythical" form in which that theory is expressed; but, apart from the fact that he interprets literally and criticizes seriously the one aspect of that theory which he could most easily have eliminated as "mythical," his disregard is the more remarkable because the treatment of time and eternity in the *Timaeus* was obviously responsible for his own theory that the perpetual process of generation is the closest approximation to real being possible for the physical world, a theory which he did not hesitate to express in the "mythical" form that, since it is impossible for all things to have real being, god completed the universe in the alternative fashion by making coming-to-be perpetual (*De Generatione* 336 B 27-34).[852]

[851] Cf. Proclus, *In Timaeum* 73 C-D (I, p. 239, 2-6, Diehl) ἄλλο γὰρ τὸ ἀεὶ τὸ χρονικὸν καὶ ἄλλο τὸ αἰώνιον· τὸ μὲν ἀθρόως πᾶν ὄν, τὸ δὲ τῇ ὅλῃ συνεχείᾳ τοῦ χρόνου συνεκτεινόμενον καὶ ἄπειρον, τὸ μὲν ἐν τῷ νῦν, τὸ δὲ ἐν διαστάσει, τῆς διαστάσεως ἀκαταλήκτου τυγχανούσης καὶ ἀεὶ γιγνομένης.

[852] See note 126 *supra*. The relation between this passage of the *De Genera-*

If Plato did intend to indicate that time is unlimited, it would follow from his theory of time as set forth in the *Timaeus* that the universe too must be of unlimited duration and that the "creation" in that dialogue was not meant to be taken literally.[853] The literal interpretation of the *Timaeus* was obviously opposed from the first, for Aristotle tries to answer those who defend the exposition of the generation of the universe by saying that it does not imply a real beginning but is used for the sake of elucidation in the fashion of a geometrical "construction"; this defense, he contends, is "untrue" because, whereas the simultaneous existence of the parts of a geometrical construction involves no contradiction, in the construction of the universe order is said to arise from disorder and these are contrary states which cannot have simultaneous existence but must be separated by a temporal process. Aristotle's rebuttal here is a *petitio principii*, for it assumes that the "production of order from disorder" was meant literally. The point of the defense, however, is just that it was not so meant but was used as a vivid method of representing two aspects of the world both of which are present in it (cf

De Caelo 279 B 32-280 A 11

tione and that of the *Timaeus* is recognized by Harder (and by Teichmuller before him [*Studien zur Geschichte der Begriffe*, p 237, note]) who because of a somewhat similar passage in "Ocellus Lucanus," § 44 (now printed as *frag* 31 of *De Philosophia* in Walzer, *Aristotelis Dialogorum Fragmenta*) argues that Aristotle took the passage of the *De Generatione* from his περὶ φιλοσοφίας with slight variations (Harder, *Ocellus Lucanus*, pp. 122-26) It should be observed that *De Generatione* 337 A 7-15 is a critical reference to the *Timaeus* (see note 91 *supra*).

[853] The direct references to time in the dialogues other than the *Timaeus* are not decisive In the *Theaetetus* (175 A) it is said that every man has had "countless myriads" of ancestors, in the *Republic* (499 C) past time is called "infinite" and in *Laws* 676 A-B "immense and enormous" and an "infinity"; while in *Laws* 781 E-782 A two possibilities are stated concerning the human race, either that it never had any beginning and will never have any end or else that it has existed for an enormous length of time In these contexts, however, even "countless" and "infinite" may be used colloquially and not strictly, and the last passage gives no decision, although the expression and the Platonic habit of assuming only the minimum required for the argument in hand may leave the impression that the first alternative was Plato's own belief (cf. Baeumker, *Philosophische Monatshefte*, XXIII [1887], p. 527)

Simplicius, *De Caelo*, pp. 306, 16-307, 11); and this interpretation is certainly supported by Plato's assertions that there are causes in the world which produce random and disorderly effects (*Timaeus* 46 E) and that the cosmos is the result of a *combination* of νοῦς and ἀνάγκη, the "errant cause" which limits the order and perfection possible for the universe (*Timaeus* 47 E-48 A). Such a continuous state intermediate between absolute order and absolute disorder is not even envisaged as a possibility in Aristotle's reply; his discussion of the terms γενητόν and φθαρτόν displays a similar incongruity with the Platonic attitude, for in establishing as the intermediate between what "always is" and what "always is not" that which "at one time is and at another time is not" (*De Caelo* 282 A 4-14) he takes no cognizance of that which is "always becoming," though this is the term which for Plato characterizes the physical universe (*Timaeus* 27 D-28 A) and which in later Platonic tradition at least was understood to be the meaning of the expression "generated" as applied to this universe.[884] There is no consideration of this in Aristotle's reply, which in fact is only a criticism of the analogy employed in the defense and which consequently, even if valid, does not prove mistaken the interpretation of Plato's intention in the *Timaeus* which the analogy was meant to exemplify.[885] The

[884] Cf. "Alcinous" (i.e. Albinus), *Didaskalikos*, XIV (p. 169, 26-30, Hermann); Taurus, *apud* Philoponus, *De Aeternitate Mundi*, VI, 8 (pp. 146, 20-147, 13, Rabe); Proclus, *In Timaeum* 89 B C (I, pp. 290, 23-291, 12, Diehl). Simplicius (*De Caelo*, p. 296, 12-18), according to his custom, argues that Aristotle must have understood Plato's real meaning, i.e. that the universe was not generated in the literal sense of having had a beginning but that as sensible it depends upon a external cause and is not "being" but "becoming." In proof of this he cites a sentence from Aristotle's epitome of the *Timaeus* (Aristotle, *frag.* 206), a sentence which renders the argument of 28 B 7-C 2. Proper understanding of that statement in the *Timaeus* should perhaps lead to this interpretation of the dialogue (cf. Cornford, *Plato's Cosmology*, p. 26), but, apart from the fact that the authenticity of the "epitome" is doubtful (cf. Rose, *Aristoteles Pseudepigraphus*, pp. 211-12), the sentence quoted does not indicate that Aristotle so understood the passage.

[885] So, for example, Gueroult (*Rev. Et. Gr.*, XXXVII [1924], pp. 73-4) and Moreau (*L'Ame du Monde*, p. 130, n. 6), though interpreting the cosmogony of the *Timaeus* "metaphorically," hold that the "generation" symbolizes a

analogy itself was used by Xenocrates certainly and probably by Speusippus, while Crantor, whether he used it or not, also took the cosmogony of the *Timaeus* to be θεωρίας ἕνεκα and to mean that the universe is without a beginning but is γενητόν in the sense that it is dependent upon an external cause; there is no evidence of any early Platonist who interpreted the creation of the *Timaeus* in the literal sense on which Aristotle insisted.[856a]

In recent years most Platonic scholars have rejected Aristotle's literal interpretation, urging against it both the opposing Academic tradition and various arguments drawn not only from other Platonic dialogues but also from indications in the

"dialectical deduction" which is essentially different from a geometrical construction

[856a] The defense reported in *De Caelo* 279 B 32-280 A 2 was certainly meant to be an interpretation of the *Timaeus*, for not only does Aristotle's reply employ a clear reference to that dialogue (280 A 7 = *Timaeus* 30 A 5) but Theophrastus in obvious dependence upon this passage of the *De Caelo* says that Plato probably called the universe "generated" for the sake of clarity ὡς καὶ τοῖς διαγράμμασι παρακολουθοῦμεν γιγνομένοις and then adds the rejoinder of Aristotle (*Phys Op.* 11 [*Dox Graeci*, p. 485] = Theophrastus, *frags.* 28 and 29) For Xenocrates cf the passages collected by Heinze as *frag* 54 and *frag* 33 (1 e [Alexander], *Metaph*, p. 819, 37-38) and Heinze, *Xenokrates*, p 71 against Baeumker, *Philosophische Monatshefte*, XXIII (1887), pp 515-16; for Speusippus cf Lang, *Speusippus*, pp 30-32 and *frag.* 54 b (also in Xenocrates, *frag* 54), for Crantor cf *frags.* 2 and 4 (Mullach) = Proclus, *In Timaeum* 85 A (I, p 277, 8-10, Diehl) and Plutarch, *De An. Proc.* 1013 A-B (also in Xenocrates, *frag.* 54) If the statement that Pythagoras and Heraclitus considered the world to be generated οὐ κατὰ χρόνον ἀλλὰ κατ' ἐπίνοιαν (Aetius II, 4, 1 and 3) comes ultimately from Heraclides Ponticus (cf Gigon, *Untersuchungen zu Heraklit*, pp. 61-2), Heraclides must have interpreted the *Timaeus* in this fashion and have extended the interpretation to Pythagoras and Heraclitus; it may be that Ἡράκλειτος in II, 4, 3 is merely an error for Ἡρακλείδης (cf. II, 25, 13; II, 13, 15; III, 17, 1 and the apparatus of Diels) In the Philonic *De Aeternitate Mundi* (§§ 13-16), which expressly follows the interpretation of Aristotle, "some" are said to believe that according to Plato the cosmos is without a beginning Plutarch, however, admits that most of those who deal with Plato reject the literal interpretation of the cosmogony (*De An. Proc.* 1013 E), and, if he knew of any Platonist who agreed with him in adopting this interpretation, it is strange that he refrains from naming him. Proclus, to be sure, says that Plutarch, Atticus, and many other Platonists took the generation of the universe literally (*In Timaeum* 84 F [I, pp 276, 30-277, 1]), but this would seem to indicate that the two men named were the first of this group known to him

text of the *Timaeus* itself.[857] Not all these arguments are equally cogent; but their cumulative force is overwhelming, and there are a few among them which are decisive. There is, in the first place, the very order in which the *Timaeus* is composed. Plato begins to describe the creation of soul after he has described the creation of the body of the universe; but, even as he does so, he declares that this order of narration is the result of "our sharing in the casual and random," the demiurge having constructed soul prior to body and its elder both in becoming and in worth (*Timaeus* 34 B-C). Why, then, if soul is prior to body, did Plato not adopt that order for his exposition? Obviously, "prior and elder" does not mean "earlier"; after all, soul, since it is intermediate between the ideas and the sensible universe (35 A-B) cannot exist "before" the sensible world either. In fact, Plato's warning means that *any* temporal sequence in the account must be a falsification. Yet, since human expression necessarily involves temporal sequence and a choice must be made, there would be a greater chance of deception if the ontologically prior soul were placed first in the exposition, for then it would be less obvious to the reader that the sequence of narration does not represent any sequence at all in the elements of the universe now being constructed. The order which Plato has chosen enables him to startle his audience out of the vulgar identification of temporal

[857] From a list too long to cite in full the following are especially important: A. Levi, *Il Concetto del Tempo . . . nella Filosofia di Platone*, pp. 106-8; A. E. Taylor, *A Commentary on Plato's Timaeus*, pp. 66-69 and 79-80; Frutiger, *Les Mythes de Platon*, pp. 199-209; Mondolfo, *L'Infinito nel Pensiero dei Greci*, pp. 70-81; Cornford, *Plato's Cosmology*, pp. 26-27, 37, 176, 203, 207-9. Of earlier treatments three deserve particular attention: Susemihl, *Die Genetische Entwickelung der Platonischen Philosophie*, II, 2, pp. 322-33; Zeller, *Phil. Griech.*, II, 1, pp. 792-96; Baeumker, *Philosophische Monatshefte*, XXIII (1887), pp. 513-29. The most recent defense of the literal interpretation known to me is that by G. Vlastos, *Class. Quart.*, XXXIII (1939), pp. 71-83. Erich Frank, though saying that the *Timaeus* has the form of a myth (*Plato und die sogenannten Pythagoreer*, p. 195) and that the demiurge is "nur ein mythisches Gleichnis" for the idea of good (*op. cit.*, p. 108), appears to take the creation literally (*op. cit.*, pp. 99-101 and 240-41). Another recent writer, P. Thévenaz, rejects the "mythical" interpretation on the entirely mistaken supposition that it makes the universe "eternal" in the sense of elevating it to the rank of the timeless intelligibles (*L'Ame du Monde . . . chez Plutarque*, pp. 92-95).

and ontological priority. Now, in the narrative order the account of soul is to that of body as is that of the sensible universe to that of chaos; and this is in itself an indication that as body is not "before" soul so the chaos did not exist "before" the universe.[368] In the second place, if one interprets literally the creation of soul and draws the consequence, as Aristotle does (pages 388-389 *supra*), that the precosmical motion is prior to that which is supposed to be the principle of motion, then one is in consistency bound to take literally the figure of the demiurge also. Of this demiurge it is said, however, that ἅπαντα ταῦτα διατάξας ἔμενεν ἐν τῷ ἑαυτοῦ κατὰ τρόπον ἤθει (*Timaeus* 42 E, see note 369 *infra*), a statement which expresses the doctrine that god must be "unchangeable" (cf. *Republic* 381 C), a doctrine which Aristotle made his own (cf. *Metaphysics* 1074 B 25-27); but, if this be taken seriously, the relation of the demiurge to the world must always be and have been the same, so that he could never have *begun* to create it nor, creating, could he ever leave off (cf Proclus, *In Timaeum* 88 C-D [I, p. 288, 14-27, Diehl]). Moreover, the work of the demiurge is the work of νοῦς (*Timaeus* 47 E 3-4) and νοῦς can exist only in soul (46 D 5-6, 30 B 3; cf *Philebus* 30 C 9-10, *Sophist* 249 A), so that the demiurge must be a soul. To this soul at least the precosmical motion cannot be prior;

[368] For another significant use of "paradoxical" order see note 334 *supra* It has long been observed as an argument against the literal interpretation that the general order of the dialogue is not chronological but systematic or conceptual (cf Zeller, *Phil. Griech* II, 1, p 796, Frutiger, *Les Mythes de Platon,* pp 202-3).

Plato's account of the four defective types of polity and the corresponding human types represents them as successive degenerations of the ideal (*Republic* 545 C-576 B), but, while the form of the exposition is historical, the order is conceptual and the purpose systematic In this, as well as in the problem of setting forth the phenomena as causally related to the ideal, this section of the *Republic* resembles the *Timaeus*, it is interesting, therefore, that it further resembles the *Timaeus* in its fate at the hands of Aristotle who criticizes it strenuously (*Politics* 1316 A 1-B 27) on the assumption that it is meant to be an "historical" account of the order of constitutional changes (cf Zeller, *Plat Stud*, pp 206 7, Frutiger, *op. cit.*, pp 41-8) In the same way, when in *Politics* 1291 A 10-33 Aristotle criticizes *Republic* 369 B-374 D, he is completely blind to the fact that the "generation of the minimal polity" is a logical construction which is not meant to be an "historical reconstruction" at all (cf Frutiger, *op cit*, pp 49-52; Cornford, *Plato's Cosmology,* p 27)

but also all soul would then be created by this soul, a contradiction which shows that the creation of soul by the demiurge cannot have been meant to be taken literally.[859] Still, as one might insist that inconsistencies between other dialogues and the *Timaeus*[860] prove nothing about the proper interpretation of the latter, since it is possible that when this dialogue was written Plato believed in a beginning of the world, whatever he may have believed before or after, so one could also take the position that, although the literal interpretation involves contradictions within the *Timaeus* itself,[861] this does not prove

[859] See Appendix XI *infra*.

[860] So, for example, besides passages in which the soul is said to exist "always" or "for all time" (*Meno* 86 A-B, *Republic* 611 A) and which in verbal strictness might be said not to exclude creation at a first moment of time, in *Phaedrus* 245 C-246 A soul is declared to be absolutely without beginning (ἀγένητον) and to be so because it is τὸ αὐτὸ ἑαυτὸ κινοῦν Again, while the *Timaeus* speaks of a disorderly precosmical motion (30 A) and says that there was γένεσις before the creation of the universe (52 D)—and so before the creation of the soul—, according to the *Laws* soul is the cause of *all* motion (892 A, 896 A-D) Plutarch's attempt to reconcile these statements of the *Phaedrus* and the *Laws* with a literal interpretation of the *Timaeus* (*De An Proc* 1014 A-1017 C, 1022 E-1027 A, cf R. M. Jones, *The Platonism of Plutarch*, pp 81-85 and Thévenaz, *L'Ame du Monde . chez Plutarque*, pp 98-102), although adopted by Martin among others, is entirely untenable and has been adequately refuted by Susemihl (*Die Genetische Entwickelung der Platonischen Philosophie*, II, 2, pp 332-3), Zeller (*Phil. Griech.*, II, 1, pp 765, n 5 and 795, n. 3), Levi (*Il Concetto del Tempo . . . nella Filosofia di Platone*, p 106), and Taylor (*A Commentary on Plato's Timaeus*, pp 117-18) The similarity of the *Phaedrus* and the *Laws* in regard to the doctrine of soul once caused Robin to argue that the *Phaedrus* must have been written later than the *Timaeus*, which he then seems to have taken literally (*La Théorie Platonicienne de l'Amour*, pp. 117-18); but this opinion he later recanted (*Phèdre*, p. vi, n 1 and pp. viii-ix, cf *Platon*, pp 42-3 and 191).

[861] So time is created along with the universe (*Timaeus* 37 D-E) but Plato repeatedly describes events *before* the beginning of time; this contradiction some interpreters sought to obviate by assuming a "disorderly time" as the precosmical "material" from which the demiurge created "regular time" (cf. Proclus, *In Timaeum* 87 E-88 A [I, pp 286, 22-287, 11, Diehl]; Baeumker, *Philos Monatshefte*, XXIII [1887], pp 524 6) Again in *Timaeus* 31 B god makes the universe of fire and earth in order that it may be visible and tangible; but in 30 A the precosmical chaos has been called visible, which means not only that it must already have had fire as a constituent but also that, according to the reasoning of 28 B-C on which the literalists chiefly base their case, it must "have come to be" (γέγονεν) and so must have had a cause (cf. Proclus, *In*

that interpretation to be mistaken, since Plato could have been either unaware of such contradictions or incapable of resolving them.[882] There is, however, one characteristic of the dialogue which invalidates this desperate and unlikely hypothesis and proves that the cosmogony of the *Timaeus* was not taken

Timaeum 87 A-C [I, pp 283, 27-285, 6, Diehl], Zeller, *Phil. Griech*, II, 1, p 793)

[882] So Vlastos argues for a literal interpretation of the precosmical disorderly motion, maintaining the position that the inconsistencies involved are symptomatic of the contradiction inherent in Plato's conception of γένεσις (*Class. Quart.*, XXXIII [1939], pp 71-83). 1) Since time is a production of the demiurge, it must be "worked over" from a raw material which he does not create and which must consequently antedate creation, this raw material is γένεσις which, since it cannot be utterly devoid of being lest it be nothing at all, must contain "some traces" of temporal order, i e "a vague, indefinite priority and succession in the temporal passage which is as yet destitute of chronological order" (*op cit.*, pp 76-7) Here Vlastos adopts the ancient notion of a "disorderly time" from which the demiurge creates "regular time" (see note 361 *supra*), although Plato nowhere mentions such a conception, does *not* say that the γένεσις of *Timaeus* 52 D 3 is the "raw material" of time, as Vlastos asserts, and *does* say that "was" and "will be," because they are κινήσεις, are properly predicable only of γένεσις which goes on *in time* (*Timaeus* 38 A 1-2), moreover, Plato had already defined the temporal instant as intermediate between past and future (*Parmenides* 152 B 2-5, see pages 419 420 *supra*), and it is unlikely that he had forgotten this when he wrote the *Timaeus*, even though Vlastos (cf *op cit*, p 76, n 2) would presumably not allow anything said about time in the *Parmenides* to influence the interpretation of the *Timaeus* 2) Since soul cannot be the ultimate cause of evil if god is not to be responsible, a physical cause is found in the disorderly motion, this "flux" or γένεσις "must be 'there' before soul can supervene to 'rule' it," and such γένεσις must involve a disorderly, mechanical motion not caused by soul (*op. cit*, pp 79-82). Here Vlastos, seeking agreement between the *Laws* and a literal interpretation of the *Timaeus*, has to insist 1) that where in the former Plato calls soul the principle of *all* motion he is not to be understood as meaning literally "all" (!) and 2) that the meaning of the doctrine of soul as ἀρχὴ κινήσεως must be different in the *Laws* from what it had been in the *Phaedrus*, since in the latter it immediately implies that soul is without beginning (see note 360 *supra*) whereas Vlastos believes that in the former it is regarded as "generated" just as it is in the *Timaeus* That is, Vlastos contends that the *Timaeus* is consistent with the *Laws* but not with the *Phaedrus* and at the same time that there is in the *Timaeus* (and the *Laws*) a fundamental contradiction which is involved in Plato's conception of being and becoming Some details of his interpretation have already been criticized (notes 314 and 349 *supra*), for the supposed difference in the *Phaedrus* and the *Laws* with regard to the status of soul see note 365 *infra* and for the relation of the "disorderly motion" to soul as the ἀρχὴ κινήσεως see pages 444-450 *infra*

literally by its author. When he wrote the dialogue he must have believed the soul to be self-motion This is certain, not merely because that doctrine is enunciated in the earlier *Phaedrus* (245 C-246 A, see note 360 *supra*) as well as in the later *Laws* (895 E-896 A) but because in the *Timaeus* itself (46 D-E) Plato distinguishes the causality of soul as primary from the secondary causality of things which, being set in motion by something else, of necessity set other things in motion, a distinction which can only mean that the primary causality is that of self-motion as is explicitly stated in the parallel classification of the *Phaedrus* (245 C 5-9) and the *Laws* (895 B, 897 A). Yet even in this passage of the *Timaeus* Plato does not openly speak of self-motion, nor does he discuss it anywhere in the dialogue, although there are several expressions which are hints or veiled reminders of it.[868] Most significant of all, there is not the slightest reference to self-motion in the *psychogonia* (*Timaeus* 35 A-36 B) nor any explanation at all of the motion ascribed to soul. It is only said that after having constructed the soul the demiurge "enveloped" its two circles with the motion that turns about uniformly in one place and made them revolve, one to the right and the other to the left (36 C); and in the summary (36 E) there is the statement that the soul, having been interwoven with the universe and having enveloped it on the outside, revolving on itself made a divine beginning

[868] For example, *Timaeus* 37 B 5, ἐν τῷ κινουμένῳ ὑφ' αὑτοῦ, which most commentators take to mean the soul (cf Proclus, *In Timaeum* 235 C-D [II, p. 308, 30-31, Diehl]) but which Cornford interprets as "the Heaven as a whole, which, as a living creature, is self-moved by its own self-moving soul" (*Plato's Cosmology*, p 95, n 2) In 77 C 4-5 ἡ ὑφ' ἑαυτοῦ κίνησις means only locomotion In 89 A ἡ ἐν ἑαυτῷ ὑφ' αὑτοῦ κίνησις is said to be the best of motions because it is most akin to the intelligent motion and the motion of the universe; this might remind a reader that true self-motion is that of soul, but the application (of bodily purges that by means of gymnastic exercise is best) restricts the concern to voluntary *bodily* motion In 89 E Plato speaks of the proper motions of the three kinds of soul but he does not mention self-motion, nor does he mention it in 90 C-D or 43 A-44 B, which passages Robin cites along with 36 E-37 B for the retention in the *Timaeus* of the proof of immortality given in the *Phaedrus* (*Platon*, p 191, cf *Phèdre*, p cxxv) Of course, ἡ αὐτοῦ κίνησις does *not* mean "self-motion"; it is only because Robin so interprets the phrase in *Politicus* 269 E 4 that he can evolve the otherwise unsupported theory which he sets forth in *La Physique dans la Philosophie de Platon*, pp. 72-3.

of ceaseless and intelligent life for all time [364] Since in describing the structure and functions of the soul Plato passed over in silence what even at this time he certainly held to be the very essence of soul, he must have had a conscious reason for doing so The reason is obvious: had he declared that the soul is self-motion, he would have ruined the whole structure and form of the *Timaeus*; if he was to put his exposition of the nature of the universe into the synthetic form of a cosmogony or "creation myth" (for the probable reasons why he chose to do so cf. Friedländer, *Platon*, I, pp. 228-31), he had to suppress discussion of that essential characteristic which for him guaranteed that the soul—and, therefore, the physical universe also—is without beginning and without end.[365] The very fact, there-

[364] Just before the *psychogonia* the demiurge is said to have wrapped the body of the universe in soul and to have established the universe as revolving in a circle (34 B), and even before this mention of soul he is said to have made the universe revolve, assigning it the motion proper to its body, that one of the seven motions which is especially concerned with reason and intelligence, and depriving it of the other six motions (34 A) Vlastos is obviously mistaken then in saying that when the demiurge creates the body of the universe "there is no question of pushing it off to a start, but only of *subtracting* from it the six 'wandering' motions" (*Class. Quart.*, XXXIII [1939], p. 81) The rotation of the universe is, of course, caused by the motion of the world-soul, but, considering 34 A alone, before the world-soul is mentioned, if Vlastos were right and the mere subtraction of the six motions could cause the universe to revolve, this motion which is "especially concerned with reason" would have been inherent in the "chaos" and would be merely the "residue" of mechanical causation

[365] Cf *Phaedrus* 245 C 246 A (see note 360 *supra*) In the *Laws*, however, the corollary that the soul is ἀγένητον is not expressly drawn, as it is in the *Phaedrus*, from the proof that soul is self-motion In 892 A it is charged that almost everyone is ignorant τῶν τε ἄλλων αὐτῆς (*scil* ψυχῆς) περί καὶ δὴ καὶ γενέσεως, ὡς ἐν πρώτοις ἐστί, σωμάτων ἔμπροσθεν πάντων γενομένη In 892 C the Athenian Stranger says εἰ δὲ φανήσεται ψυχὴ πρῶτον, οὐ πῦρ οὐδὲ ἀήρ, ψυχὴ δ' ἐν πρώτοις γεγενημένη, σχεδὸν ὀρθότατα λέγοιτ' ἂν εἶναι διαφερόντως φύσει In 894 D 10 self-motion is called πρῶτον γενέσει καὶ ῥώμῃ In 896 B 10-C 2 the Stranger says ὀρθῶς . . . εἰρηκότες ἂν εἶμεν ψυχὴν μὲν προτέραν γεγονέναι σώματος ἡμῖν, σῶμα δὲ δεύτερόν τε καὶ ὕστερον and, recapitulating the results, in 967 D 6-7 ψυχή τε ὡς ἔστιν πρεσβύτατον ἁπάντων ὅσα γονῆς μετείληφεν Soul is declared to be identical with τὴν πρώτην γένεσιν καὶ κίνησιν τῶν τε ὄντων καὶ γεγονότων καὶ ἐσομένων καὶ πάντων αὖ τῶν ἐναντίων τούτοις (896 A), and this is repeated in the assertion that soul is γένεσις ἁπάντων πρώτη (899 C 6-7) Some or all of

fore, that he refrained from mentioning this characteristic of soul, substituting instead the vague remarks that god "enveloped" soul with motion and that it made a beginning of ceaseless life, proves him to have been conscious that his own doctrine was inconsistent with a literal beginning of the uni-

these passages have at times been adduced as proof that Plato when he wrote the *Laws* believed soul to be "created," i e to have had a beginning (cf. most recently Vlastos, *Class Quart*, XXXIII [1939], pp 79, n 2 and 82, n 1 [on 904 A, *ἀνώλεθρον δὲ ὂν γενόμενον ἀλλ' οὐκ ἀΐδιον*, which Vlastos also cites but which is not evidence either way, *ὂν γενόμενον* being a periphrastic participle, see Appendix V, page 509 *infra* and cf Robin, *Phèdre*, p cxxv, n 1]) Now, it would be something more than strange if the same argument from which in the *Phaedrus* Plato concluded that soul is *ἀγένητον* should in the *Laws* lead to the conclusion that it is *γενητόν*; the correspondence of the steps in the arguments of the two dialogues is exact (cf Stenzel, cited in note 343 *supra*), and Plutarch's attempt, which Martin adopted, to distinguish between an "ungenerated" irrational soul and a "generated" rational soul is obviously refuted by the texts (see note 360 *supra*, cf Gueroult, *Rev Ét Gr*, XXXVII [1924], p. 71) The scope of the argument in the *Laws* is determined by the thesis which it is meant to refute, namely that fire, water, earth, and air are *πρῶτα* and that soul is *ἐκ τούτων ὕστερον* (891 C) The atheists against whom Plato here argues declare what he believes to be the primary cause of the generation and destruction of everything *οὐ πρῶτον ἀλλὰ ὕστερον εἶναι γεγονός* (891 E); to refute them he need say nothing as to whether soul is absolutely without beginning but has only to prove that it is *πρεσβυτέραν σώματος* This limit of his argument he clearly states in 892 C; he reaches the conclusion desired in 896 B 10-C 2 and then reminds his audience (896 C 5-7) that this was all that was needed to destroy the foundation of the atheists' case, and once more at the end (899 C) he emphatically states the limits of the argument, that unless his opponents can prove soul not to be the *πρώτη γένεσις ἁπάντων* they must admit the existence of gods In other words, Plato does not here explicitly draw the conclusion that soul is absolutely without beginning, simply because that point is superfluous to his present argument and like a skilled debater he confines himself both in assumption and proof to the minimum necessary for establishing his case (see also note 353 *supra*). Nevertheless, there are clear indications in the course of the argument that he has not abandoned the position of the *Phaedrus*. In 894 B-895 B he argues first that moving things, each of which is moved by another, necessarily imply self motion as the ultimate principle of their motion, since what is moved by something else cannot be a prime mover, and secondly that, if all things should be assumed to be at rest, a first motion would have to be self-motion, for, since there is no change in the things at rest, change induced by something other than self-motion (i e by a moved mover) could not be prior to this. In this passage, which is simply an expansion of *Phaedrus* 245 D 7-E 2 (*τὸ αὐτὸ αὑτὸ κινοῦν . . . οὔτ' ἀπόλλυσθαι οὔτε γίγνεσθαι δυνατόν, ἢ πάντα τε οὐρανὸν πᾶσάν τε γῆν εἰς ἓν συμπεσοῦσαν στῆναι καὶ μήποτε αὖθις ἔχειν ὅθεν*

verse and to have meant the creation to be understood as a mythical form of exposition. He may have thought that this suppression itself, especially when set in relief by his hints at the doctrine suppressed, would make the mythical character of the creation all the more obvious to his audience If so, he was to be disappointed, for even Xenocrates, although he understood that the generation of the universe had not been meant literally, missed the significance of this omission; and not only did he miss its significance, but he tried to deny or repair the omission and thereby injected into the interpretation of Plato's doctrine of the soul a confusion which has lasted into modern times [866]

κινηθέντα γενήσεται), the first part implies that "generated self-motion" is a contradiction in terms and the second that, if soul as motion were "generated," not it but its generator would be self-motion and the ἀρχὴ κινήσεων πασῶν (This argument is meant to show that even the cosmogonies of Anaxagoras and others would have logically to assume self-motion It does not, of course, mean that, as Hardie strangely supposes [*A Study in Plato*, pp 150-1], Plato himself here assumes that "at some time motion was introduced by soul into a motionless world", that it does not is proved by 895 A εἰ σταλῇ πως . . καθάπερ οἱ πλεῖστοι τῶν τοιούτων τολμῶσι λέγειν [cf Stenzel, *op. cit.*, p. 15 and Vlastos, *loc. cit*, p 82, n 2, and observe that the parallel passage of the *Phaedrus* and *Laws* 896 D 10-E 3, 896 E 8-897 B 5 assert the very points one or the other of which Hardie says "the argument would have to assume" if his interpretation is not correct]) That soul is called πρώτη γένεσις does not at all imply that it ever did not exist or was ever "generated" in the sense of being "now" after not having been "before" Soul is, of course, a "process," though not a physical process, being intermediate between the ideas and the physical universe; it too is dependent upon the real being of the ideas, but the very fact that it is called πρώτη γένεσις of all things that are or have been or will be and of all their contraries (*Laws* 896 A, 899 C 6-7) shows that Plato did not here envisage any "production" or "creation" of it (cf. Proclus, *In Timaeum* 175 D [II, p 117, 11-23, Diehl], Hackforth, *Class. Quart*, XXX [1936], p. 5, whose interpretation of 967 D 6-7, however, though syntactically correct, is wrong in regard to the meaning of ὅσα γονῆς μετείληφεν, for γονή is probably active, so that the clause means "all that partake of the power of generation")

[866] Xenocrates interpreted ἡ τοῦ ἑτέρου φύσις of the *psychogonia* (*Timaeus* 35 A) as the principle of motion and ἡ ταὐτοῦ φύσις as the principle of rest (Xenocrates, *frag* 68 = Plutarch, *De An Proc* 1012 D-F, see Appendix V, page 511 *infra*), an identification against which Plutarch rightly protests (*De An Proc* 1013 D-E, 1024 D) For the somewhat similar interpretation of "Timaeus Locrus" see note 305 *supra* Cornford has observed that in the *psychogonia* nothing is said about motion and rest (*Plato's Cosmology*, p. 62, n 1); and

Since the literal interpretation of the creation in the *Timaeus* is erroneous, Aristotle is deprived of his reason for denying Plato's right to call soul the principle of motion (*Metaphysics* 1071 B 37-1072 A 3 [see pages 388-389 *supra*]) Yet, in saying that Plato "sometimes" supposes this, the self-mover, to be the principle of motion, he seems to imply another criticism,

Taylor, though with overtones of his special theory concerning the *Timaeus*, that "Timaeus made no use of [self-motion] in his description of the making of the cosmic ψυχή" (*A Commentary on Plato's Timaeus*, p 178) Zeller, however, makes Plato derive the motion of soul from its "composition," from the combination in it of Undivided and Divided, Ideal and Corporeal, Same and Other (*Phil Griech*, II, 1, p 774, n. 2), according to Rivaud the motion of soul is due to the nature of the Other which it contains (*Le Problème du Devenir*, p 313); and Vlastos says that "the Other and the περὶ τὰ σώματα γιγνομένη . . οὐσία" account for the soul's "susceptibility to irrational motion," motion being "inherent in this γιγνομένη οὐσία which is one of the soul's ingredients" (*Class. Quart*, XXXIII [1939], p 80) At one time, Robin says (*Idées et Nombres*, pp 492-5) that soul moves itself because it is the place of ideas (on which error see Appendix IX, page 565 *infra*), and he derives motion from the supposed "hierarchical development" in the sphere of ideas which he makes depend upon the Same and the Other, the One and the Great-and-Small, elsewhere, however, he simply says that the motion of soul is due to the Same and the Other (*Phèdre*, p cxxvi and *Platon*, p 201), and he even goes so far as to approve Xenocrates' definition of soul (*La Physique dans la Philosophie de Platon*, p 53; see note 325 *supra*) and to assert (*ibid*, p. 57) that he was right in saying "que le Même et l'Autre correspondent à la motricité de l'âme" (1). For none of these interpretations is there the slightest support in Plato's writings; they all depend upon misinterpretation of the *psychogonia* (for which see notes 337 and 339 *supra*), while most of them, confusing with Aristotle the "receptacle" of the *Timaeus* and the "non-being" of the *Sophist* (see page 384 *supra*) and identifying this result with the "other" in the *psychogonia*, tacitly or openly import into the soul the mechanical motion of the errant cause described in *Timaeus* 57 E-58 A and thus actually derive the self-motion which Plato calls primary causality from the random motions which he calls secondary (see also note 381 *infra*).

All such attempts as that of Xenocrates to find within soul a factor which is the principle of its motion ignore Plato's fundamental conception of motion, namely that it cannot be analyzed into factors which are not motion and that therefore the principle of all motions must be irreducible self-motion (see pages 412-413 *supra*) Soul as self-motion may be dependent upon an idea, but that is not to say that there are constitutive factors of motion into which soul can be analyzed, and the idea upon which it depends is, as will be seen, the idea of motion, which is itself not reducible to any other terms either (see pages 438-442 *infra*) To make soul self-motion and then designate a factor of soul the

a charge of inconsistency of another kind; at any rate, he does find in Plato's theory two other "principles of motion" to refute, not to mention his criticism of the ideas in general as causes of becoming Now, the doctrine that soul is as self-motion the principle of all motion appears, in explicit terms at least, only in the *Phaedrus* and the *Laws*, and its appearance in the *Phaedrus* is frequently said to mark an important change in Plato's conception of soul and in his attitude toward the physical world [367] The causality of soul, however, is asserted in dialogues which according to this reckoning are earlier than the *Phaedrus*.[368] In the *Charmides*, for example, the soul is said to

principle of its motion, as Xenocrates does, is to render Aristotle's criticism valid as it is not valid against Plato's position, for, if this factor is not itself in motion, then the so called self-moving soul really consists of an unmoved mover and a part which is moved, whereas, if this principle of the soul's motion is itself self-moving, then not the soul but this principle alone would be self-motion—and, by definition, would alone be soul (cf *Physics* 257 B 26-258 A 5, especially 257 B 30-32 [see note 310 *supra*] and the modification of this argument actually used against Xenocrates in *De Anima* 409 A 15-18 [page 398 *supra*]) Similarly, by calling soul 'self-moving number" instead of ' self-moving motion" or "self-motion' Xenocrates would allow Aristotle to distinguish the soul as subject from its motion as an attribute and so to have at least a semblance of justification for his refutation of self-moving soul (see pages 411-412 *supra*).

[367] Cf especially Stenzel, *Über zwei Begriffe der platonischen Mystik*, p 12; von Arnim, *Platos Jugenddialoge*, pp 176-82, Wilamowitz, *Platon*, I, pp. 456-9, Theiler, *Zur Geschichte der teleologischen Naturbetrachtung*, pp 64-5 and 69

[368] The plausible arguments are all in favor of the predominant modern view that the *Phaedrus* is later than the *Phaedo* and the *Republic*, the latter of which it probably followed closely in time of composition (cf Shorey, *What Plato Said*, pp 549-50 and *Unity*, pp 71-4, Ritter, *Platon*, I, pp 254-65, Ueberweg-Praechter, p 218, Robin, *Platon*, pp 42-3 [see note 360 *supra*, *sub fin*], Friedlander, *Platon*, II, p 485, n 1) One must admit this conclusion even after giving due weight to De Groot's sensible warning against the "method of using statistics of words and phrases to determine the chronological order of Plato's dialogues" (*A Handbook of Antique Prose-Rhythm*, I, p 81); in fact, De Groot's intelligent observations concerning the peculiar nature and purpose of the *Phaedrus* (*op cit*, pp. 72-80) seem to undermine his own reasons for dating that dialogue earlier than the *Phaedo* and the *Republic* (*Der Antike Prosarhythmus*, I, pp 55-6) At any rate, in considering Plato's theory of soul one must assume, at least as a preliminary hypothesis, that the *Phaedo* preceded the *Phaedrus*, since even Natorp, though still insisting upon the chronological priority of the "original" *Phaedrus*, finally assigned the doctrine of soul in that dialogue to a complete "revision" made by Plato in his later days (*Platos Ideenlehre*, pp 489, n. 1 and 529 [cf. p 60]).

be the origin of all good and evil for the body (156 E, cf *Republic* 403 D), a notion which seems at least to forecast the more general statement of *Laws* 896 D; in the *Gorgias* (465 C-D) and the *Phaedo* (80 A, 94 B-E) it is said to have the governance and rule of body, just as it is in the later dialogues (cf. especially *Laws* 896 C, *Phaedrus* 246 B); and the functions which according to *Republic* 353 D it alone can perform, τὸ ἐπιμελεῖσθαι καὶ ἄρχειν καὶ βουλεύεσθαι καὶ τὰ τοιαῦτα πάντα, appear in *Laws* 896 E-897 A among the names of the motions whereby it directs all things in the universe. Moreover, in the *Phaedo* (97 C-99 D) Anaxagoras is criticized because he made no use of the principle that νοῦς is the regulator and cause of all things even after he had enunciated it but fell back in every particular case upon physical or mechanical causation (cf. Aristotle's repetition of the criticism, *Metaphysics* 985 A 18-21), an error which is ascribed to the inability to distinguish between true "cause" and "that without which the cause would never be a cause." In the *Laws* immediately after recapitulating the conclusions concerning soul (966 D-E) Plato repeats this mixed praise and blame of Anaxagoras whose doctrine of νοῦς he calls a kind of premonition of his own but who, he says, failing to understand the priority of soul to body supposed inanimate bodies to furnish the causes of the universe (967 A-C). In the light of this passage the criticism of the *Phaedo* would seem to imply that even at that time Plato believed mind or soul to be the cause of all physical phenomena in the sense that it is the true cause of all motion.[369] Finally, the concept

[369] The conception of soul on which depends the argument for immortality in the *Phaedrus* is frequently ascribed to the influence of Alcmaeon (cf Stenzel, *Über zwei Begriffe der platonischen Mystik*, p 13, Wilamowitz, *Platon*, I, pp. 456-7, Friedlander, *Platon*, I, p 222), for the report of whose argument in *De Anima* 405 A 29-B 1 cf *Crit Pres. Phil*, p 299, n. 32, and yet the views of Alcmaeon must have been known to Plato when he wrote the *Phaedo* (96 B 5-8 [cf. *Frag. der Vorsok*[6] 24 A 11], cf Taylor, *Plato*, p 306, n 2, who uses this fact to defend his "Socratic" thesis). In any case, the passages of the *Laws* (967 A-C) and the *Phaedo* (97 C-99 D) indicate that Plato himself considered his theory of self-moving soul as the ἀρχὴ κινήσεως to be a logical extension and correction of Anaxagoras' doctrine of νοῦς, and this indication is confirmed by the frequency of his references to Anaxagoras in passages concerned with the soul's immortality, motion, and causality (e g. *Laws* 895 A-B [see note 365,

of self-motion is *not* first mentioned by Plato in the *Phaedrus* but appears in a dialogue which is universally admitted to be earlier than either the *Phaedrus* or the *Phaedo*, namely the *Charmides*.[370] To be sure, it is not here identified with soul, nor is its existence even positively asserted, but, then, the dialogue is not ostensibly concerned with the definition of soul or the problem of motion. Socrates, after having declared it impossible for some terms to be relative to themselves, says that there are others which would arouse disbelief in some people but in others probably would not; "motion which moves itself" he simply mentions as an example of the latter class, and he passes no judgment himself but says that it requires a great man to decide whether *nothing* is itself the correlate of its own faculty or this is so in some cases and not in others (*Charmides* 168 E-169 A) It is certain, then, that Plato in the earliest period of his writing was aware of the concept of self-motion and that he did not reject it, the similarity of Socrates' remarks on the subject to his statement in the *Parmenides* concerning the intercommunion of ideas (129 D-130 A; cf. Shorey, *Class. Phil.*, XXVI [1931], pp. 91-3) and to Parmenides' remarks concerning the man who can understand and teach the doctrine of absolute ideas (*Parmenides* 135 A-B) makes it probable that just as Plato, when he wrote the *Parmenides*, already held the two doctrines there mentioned (for

page 431 *supra*], *Phaedo* 72 C-D, *Gorgias* 465 C D, *Cratylus* 400 A-B, *Philebus* 28 C-E and 30 D, and even *Timaeus* 42 E where ἔμενεν ἐν τῷ ἑαυτοῦ κατὰ τρόπον ἦθει [see page 425 *supra*] may be meant as a criticism of Anaxagoras for having νοῦς *withdraw* from what it has set in motion [*frag* 13]) Aristotle was able to find his own *unmoved* mover in Anaxagoras' νοῦς (*Physics* 256 B 24-27, cf *Cret. Pres. Phil*, p 172, *n* 122); certainly, when he adduced Leucippus, Plato, and Anaxagoras as witnesses for the "priority of actuality," it would have been more reasonable to link Plato with Anaxagoras than with Leucippus as he does (*Metaphysics* 1071 B 28-1072 A 7, see page 385 and note 306 *supra*)

[370] Cf. Robin, *Platon*, p 41; Ritter, *Platon*, I, p. 273 (cf Grube, *Plato's Thought*, pp xii f), p 254 and *Hermes*, LXX (1935), pp 1-30. Of the earlier critics listed by Ritter (*op cit*, pp 230-31) all who did not date the *Charmides* before the *Phaedrus* held to the ancient tradition that the latter was the first of all the dialogues and so would have had to admit that Plato held the theory of self-moving soul from the beginning The *Charmides*, of course, did not escape the charge of spuriousness so freely made in the nineteenth century (cf. Zeller, *Phil. Griech.*, II, 1, p. 479, n. 4)

the intercommunion of ideas see note 128 *supra*) so, when he wrote the *Charmides*, he had already formulated at least the essential characteristics of the theory of self-motion as it appears in his later dialogues This justifies anew the attempts which have been made to find a connection between the proof of immortality in the *Phaedrus* (245 C-246 A) and the argument in the *Phaedo*, especially the so-called third or final demonstration (*Phaedo* 100 B-106 E),[871] where the soul's immortality is established through its necessary participation in the idea of life and this essential relation is inferred from the fact that soul is always and everywhere the cause of life in any living body (105 B-106 D);[872] if for Plato the distinguishing

[871] Cf Zeller, *Phil Griech.*, II, 1, pp 818 ("es [ist] der Seele so wesentlich, an der Idee des Lebens theilzuhaben, dass der Tod nicht in sie eindringen kann, weshalb sie auch geradezu als das sich selbst Bewegende definirt wird"), 825 31 (criticized by Shorey, *Unity*, p 41), Ritter, *Platon*, II, pp 294 and 493; Frutiger, *Les Mythes de Platon*, p 138, n 1, Piat, *Platon*, p 145, n 1 (where *Phaedo* 72 B-D and *Phaedrus* 245 C-E are brought together, cf Gueroult, *Rev de Métaph et de Morale*, XXXIII [1926], pp. 484 f) and p 240, n. 3 ('Dans le *Phédon* il affirme bien . que la vie est de l'essence de l'âme, mais il ne le démontre pas, et son argument demeure incomplet Dans le *Phèdre* . l'âme devient un τὸ ἑαυτὸ κινοῦν, et la notion de la vie se précise" [cf Gueroult, *Rev Ét. Gr*, XXXVII, 1924, p 69]) Much the same as this last remark of Piat's is Pohlenz's explanation of the proof in the *Phaedrus* as an expansion of that in the *Phaedo* (*Aus Platos Werdezeit*, p 329) This explanation is rejected by Stenzel (*Über zwei Begriffe der platonischen Mystik*, p 12, n 4) because the *Phaedrus* concerns itself with the kind of physical demonstration which had been rejected in the *Phaedo*, but, even if this be so, it does not exclude the possibility that Plato was in the two dialogues consciously expressing two different aspects of the same doctrine or purposely demonstrating the same characteristic of soul from opposite points of view Recently Moreau has again tried to bring together the proofs of the *Phaedo* and the *Phaedrus*, of which he considers that of *Republic* X (608 D-611 A) to be the first "mise en forme" (*La Construction de l'Idéalisme Platonicien*, p 259) "l'argument du *Phèdre* . vient combler, dans la mesure du possible, l'*argumentation* ontologique du *Phédon*, en apportant le fondement de ses postulats" (*op. cit*, p. 487)

[872] Natorp's identification of soul with the idea of life (*Platos Ideenlehre*, pp. 477 and 499) is entirely without justification, as is Rodier's supposition that soul is itself meant to be an idea (*Etudes de Philosophie Grecque*, pp 152-3) The soul is sharply differentiated from corporeal existence in the *Phaedo*, but it is also distinguished from the ideas; and the final demonstration is so constructed as to show that the logic holds though the soul is not an idea (n. b. 106 A-D: if ἄθερμον and ἄψυκτον implied ἀνώλεθρον as ἀθάνατον does, physical fire and

characteristic of *living* body was even at this time spontaneous movement, he must have considered soul as the cause of "living" to be the cause of "moving" and its necessary participation in the idea of life to be essential participation in the idea of motion [873]

At any rate, the *Sophist* makes it clear that the doctrine of soul as self-motion and the assumption of an idea of motion are not incompatible but, on the contrary, are closely connected, for the existence of this idea of motion, which figures as an important example in the later exposition (*Sophist* 254 D-258 C), is established by the reasoning that νοῦς is a reality implying life and soul and that the real existence of soul implies the real existence both of something moving and of motion itself (*Sophist* 248 E-249 B) Thus Plato shows that, even though the physical motion of the phenomenal world be taken to signify lack of reality, as it is by the "friends of the ideas" whose conclusion concerning the unreality of motion he here opposes (*Sophist* 248 A-E, cf. 249 C-D and 252 A), still, if one admits the existence of νοῦς, one thereby admits the reality of motion which is other than physical motion (i. e. the psychical self-motion) and which then implies the existence of an idea of motion, itself like all the ideas "immobile." [874] It is not merely the attitude of the "friends of the ideas," however, which requires Plato to infer the reality of motion from something other than the physical motions of the phe-

snow could not be extinguished or melted just as soul cannot be destroyed). See Appendix V, pages 508-509 *infra*; cf Robin, *Platon*, pp 175 6, there referred to, and Moreau, *La Construction de l'Idéalisme Platonicien*, pp 391-5

[873] For the equivalence of "living" and "moving," the ἔνδοξον formally stated in *Laws* 895 C and *Phaedrus* 245 E, cf. *Sophist* 249 A 9-B 1, *Cratylus* 400 A 5-6 and 432 B-C, and Aristotle, *De Anima* 403 B 25-27 and *Physics* 255 A 5 7

[874] Plato continued to assert that the ideas are immobile and unchangeable after he wrote this passage just as he had before (see Appendix VII, page 538 *infra*), and in this passage itself, after having established the reality of motion, he states again that the objects of knowledge must be invariable and so at rest (*Sophist* 249 B 8-C 5) The idea of motion, then, is itself immobile (cf Simplicius, *Phys.*, pp 405, 24 406, 16); and it may be as a reference to this that one should understand the much-debated remark (*Sophist* 256 B 6-9) that if the idea of motion were somehow to partake of rest it would not be out of place to call it stationary (cf, however, Cornford, *Plato's Theory of Knowledge*, p. 286, n. 3).

nomenal world, for their attitude is his own in so far as it regards these motions as manifestations of instability which is characteristic of the falling short of the real being of the ideas and it is in conflict with his own only in assuming that all motion is such motion and concluding that consequently no motion can have real existence. The continuous flux of sensible phenomena, a *datum* of Plato's philosophy from first to last (see pages 211-220 and note 129 *supra*), is, when regarded as flux, simply indeterminateness, which is a negation of the ideas and so could not imply an idea as its model or cause (see notes 172 and 192 and, on negative terms and ideas, pages 264-272 *supra*) The idea of motion could have been posited as the model, the ἓν ἐπὶ πολλῶν, only of *positive* motions, and such positive motions are only the self-motions which are souls. The inference in the *Sophist*, then, proceeds from νοῦς instead of from physical motion not merely because a particular group of men to whom Plato here directs his argument denied the reality of the latter while at the same time admitting the reality of νοῦς; it reveals the way and the only way in which Plato himself could have been led to posit an idea of motion, and it indicates that the relation of soul to this idea is identical with that of soul to the idea of life in the argument of the *Phaedo*. It is obvious, however, that the foundation of the inference in the *Sophist*, the reality of νοῦς which implies the real existence of soul, is not a novel doctrine (see Appendix XI [pages 606-607 *infra*] on *Republic* 517 B-C and 508 B-D, and cf. 490 B); and, furthermore, the conclusion which the argument establishes, namely the existence of an idea of motion, is not novel either, for this idea is mentioned among the separate ideas which Socrates lists in the *Parmenides* (129 D-E) when he first outlines his theory to Zeno and Parmenides That the theory there outlined by Socrates is the same as that of the *Phaedo* is generally admitted, however the subsequent criticism of Parmenides is explained;[878] but then to this "earlier stage"

[878] Cf Diès, *Parménide*, pp 42-4; Cornford, *Plato and Parmenides*, p. 70; Wahl, *Étude sur le Parménide*, p. 17, Wundt, *Platons Parmenides*, pp. 63-4; Stenzel, *Studien*, p. 32, Robin, *Platon*, pp. 126 8; also Burnet, who takes the theory criticized to be Socrates' own and not Plato's (*Thales to Plato*, pp. 255-6),

must belong the assumption of an idea of motion[376] and therewith the doctrine of the positive self-motion of souls, since it was this which led Plato to posit such an idea

Concerning the relation of soul as self-motion to the idea of motion Aristotle says nothing either in exposition or in criti-

and Natorp, who takes it to be a distortion of Plato's own theory (*Platos Ideenlehre*, pp. 230-33)

[376] It is not a "new development" either for Plato in the *Sophist* to posit as ideas the actions which are the meanings of verbs (*Sophist* 261 D-263 D, cf Cornford, *Plato's Theory of Knowledge*, pp 312-17 and 279), πράξεις had been declared to be ὄντα in the *Cratylus* (386 E-387 B)

Since the "friends of the ideas" (*Sophist* 248 A-E) would not deny the reality of motion if they recognized an idea of motion, they cannot represent or include Plato's own earlier doctrine, as is now frequently asserted (cf Wilamowitz, *Platon*, I, pp 558-9, Grube, *Plato's Thought*, pp 296-7, Cornford, *Plato's Theory of Knowledge*, pp 242-6, Wundt, *Platons Parmenides*, pp 65-6) To argue that Plato in his earlier writings "separated" the ideas and made them immobile is nothing to the point, since he continues to do so hereafter also (see note 374 *supra* for immobility, pages 206-211 *supra* for "separation") and even here it is not the separateness and immobility of the ideas that he criticizes but the denial of any reality of motion Consequently, if the "friends of the ideas" represent followers who had mistaken his doctrine, as Natorp (*Platos Ideenlehre*, pp. 292-3) and Ritter (*Platon*, II, pp 131-4) hold, their mistake did not lie, as these interpreters maintain, in taking the "apparent separation" of the *Phaedo* literally (on Natorp and Ritter see note 124 *supra*) As in the opposing Titans (*Sophist* 246 A-247 E), in the "friends of the ideas" Plato dramatizes a tendency, and Friedlander would interpret the two simply as "antithetische Standpunkte innerhalb des einen schopferischen Menschen" (*Die Platonische Schriften*, p. 525, n. 1) Diès (*Sophiste*, pp 292-6) also takes the "friends of the ideas" to be a "literary fiction" but with greater precision observes that the attitude which they embody is the kind of "pluralistic Eleaticism" implied by Parmenides' acceptance of the ideas despite all difficulties in the dialogue *Parmenides* (135 B-C, see note 125 *supra*). Yet still greater precision is possible in determining the motivation of Plato's dramatization and his choice of the nomenclature οἱ τῶν εἰδῶν φίλοι Of Aristotle's criticisms of Eudoxus in the περὶ εἰδῶν some appear among Parmenides' objections in the *Parmenides* where they are also probably meant to criticize such conceptions as Eudoxus' "mixture" of the ideas with sensibles, and the criticisms which do thus correspond attack Eudoxus' theory on the ground that it is incompatible with the *impassivity* and *immobility* of the imperishable and separate ideas (see Appendix VII *infra* [especially pages 530-532 and 535-536]) Such arguments against Eudoxus must have been common in the Academy, and many who used them probably failed to see that, although the ideas, being ἀπαθεῖς καὶ ἀκίνητοι, could not be involved in μίξις and κίνησις as they would be in Eudoxus' theory, this still did not preclude the reality of motion or ideal μίξις. They were consequently in danger of denying the inter-

cism Nor are his methods of disproving the existence of an idea of motion special refutations restricted to use against this idea The argument from the categories (*Metaphysics* 1065 B 7-14 = *Physics* 200 B 32-201 A 9 [page 384, note 304 *supra*]) is employed against the ideas of unity and good also (see note 226 *supra*); and the objection that "absolute motion" would be at best the potency of a subject (*Metaphysics* 1050 B 34-1051 A 2 [page 384 *supra*]) is brought against "absolute knowledge" as well and by implication against the Platonic ideas in general (see page 333 *supra*), which elsewhere too are all rejected as causes of the perpetuity of the world-process on the ground that they are mere potentialities (*Metaphysics* 1071 B 12-20 [page 380 and note 298 *supra*]). In applying the former of these arguments to the idea of motion it is assumed, as in the argument against self-motion (see pages 411-413 *supra*), that all κίνησις is the change of a subject, and from this assumption it is concluded that, since everything falls into one or another of the categories, κίνησις can be only the change of something in substance, quality, quantity, or place.[877]

communion of ideas which Plato had hitherto assumed (see note 128 *supra*) and of being forced to admit that the intelligible ideas cannot be known; and the cause of this was just their failure to remember that there is κίνησις other than physical motion and that the μῖξις of intercommunion is not physical mixture, so that the ideas can be ἀπαθεῖς καὶ ἀκίνητοι and can still have intercommunion with one another and be known by νοῦς. In the *Sophist* (248 D-E) Plato says that the "friends of the ideas" cannot allow knowledge to be an action because then the immobile ideas would be moved διὰ τὸ πάσχειν He does not mean to assert that the ideas *are* moved by being known, nor is this his proof of the reality of motion (as Cornford rightly observes [*Plato's Theory of Knowledge*, p 245]), he means that the "friends of the ideas," although they consider the ideas to be intelligible, are prevented from admitting knowledge to be activity because they fail to see that the κίνησις of νοῦς is other than physical motion and so does not involve the alteration of its object. Plato's own conception of the ideas was not affected by this apparent "problem" which Eudoxus' theory and its Academic criticism raised (see Appendix VII, pages 537-539 *infra*), but in this over-zealous and uncritical Academic rebuttal of the κίνησις and μῖξις which Eudoxus imported into the theory of ideas is to be found the source of that "pluralistic Eleaticism" which the "friends of the ideas" mistook for rigorously consistent Platonism

[877] Aristotle restricts change to these four and κίνησις to the last three (cf. *Physics* 225 A 34 B 9), so that his conclusion, ὥστε κινήσεως καὶ μεταβολῆς ἐστὶν εἴδη τοσαῦτα ὅσα τοῦ ὄντος, overshoots the mark. In *Metaphysics* 1029 B 23-25

Plato, however, had expressly distinguished the self-motion which is soul from change in any of these respects (*Laws* 896 E-897 B [see pages 402-403 *supra*]) and had, as it were by anticipation, implicitly denied Aristotle's assumption when against the "friends of the ideas" he maintained that there is κίνησις which is not physical change and which therefore implies the existence of an idea of motion (see pages 437-439 *supra*).[378] This idea, then, was not conceived as the "class" of all physical changes or as the "abstract type" of any of them but as the absolute reality which manifests itself in the positive self-motions which are souls. Herein is contained the answer to the second of the above objections also. Absolute motion as a potency would be the possibility of motion latent in a subject. Soul, however, as self-motion in which there is no distinction of substrate and activity can have no potency of motion in this Aristotelian sense which involves the possibility of contrary determinations[379] but as a positive process must have a pattern

κίνησις appears as a category, where, however, it is interpreted as an abbreviated expression for ποιεῖν καὶ πάσχειν (cf Trendelenburg, *Geschichte der Kategorienlehre*, p. 135 and *ibid*, pp 136-40 and 160-61 for the relation of κίνησις to the categories)

[378] The fact that Aristotle's argument applies only to physical motion is used by Simplicius to "reconcile" the discrepancy between his view and Plato's (Simplicius, *Phys.*, pp. 404, 16-406, 16, see also page 412 *supra*) Aristotle would not have accepted Plato's contention that νοῦς implies motion, although that it implies life and activity he would, of course, admit, but this activity of νοῦς, he maintains, is not κίνησις, even though as a consequence of his position he has to posit an ἐνέργεια ἀκινησίας (*Eth. Nic* 1154 B 24-28) which a Platonist might hold to be only a paradoxical expression for psychical motion (see note 332 *supra*) If this ἐνέργεια ἀκινησίας is not inaction but "a life of activity without cessation or change" (cf Schiller, *Bibliothèque du Congrès International de Philosophie* [Paris, 1900], IV *Histoire de la Philosophie* [Paris, 1902], pp 193-209), it is in fact ἄλλο εἶδος κινήσεως (see note 329 *supra*) and Aristotle does after all admit a primary motion outside of the categories, making it an aspect of the same perfect substance which he posits as the primary being, unity, and good and which is therefore itself a rebuttal of his use of the doctrine of the categories as an argument against the existence of those ideas (see pages 356-364 *supra*)

[379] Because πᾶσα δύναμις ἅμα τῆς ἀντιφάσεώς ἐστι (*Metaphysics* 1050 B 8-16) Aristotle himself to save the eternal motion of the heaven asserts that it is in motion not in virtue of a potentiality (1050 B 20-28) thereby in effect making it a self-mover (see Appendix X, page 583 *infra*) Plato's phraseology in

in reality of which it is the manifestation. This latter, then, and not "motion in general" or "unspecified motion" is what Plato means by the absolute motion which is an idea. As in the *Phaedo* (105 B-106 E) the idea of life is the cause of living bodies only mediately through the soul which is immortal because of its necessary participation in the idea of life, so the idea of motion, which we have already seen reason to identify with the idea of life (pages 435-437 and 438 *supra*), is the cause of phenomenal change only indirectly through the soul which is self-motion without beginning or end because of its necessary participation in the idea of motion,[880] and as the psychical being, identity, and difference is intermediate between the ideas of being, identity, and difference and the dispersed appearances of these ideas in the phenomenal world (see pages 407-411 *supra*) so is the self-motion, which is soul, intermediate between the phenomenal movements and the idea of motion.

This idea of motion must not be identified with the idea of difference; Plato states this emphatically (*Sophist* 255 B, 256 C) and also that the non-being which exists is this idea of difference, by intercommunion with which each idea is *other* than every other idea and *is not* any or all of them (*Sophist* 257 B-259 B; see pages 261-265 *supra*). Motion itself, then, the ideal principle of motion, is not "otherness," "non-being," or "indefiniteness," although like any idea, being other than everything else, it *is not* an indefinite number of beings, among which is being itself (*Sophist* 256 D-E).[881] Xenocrates, by

defining soul, *τὴν δυναμένην αὑτὴν αὐτὴν κινεῖν κίνησιν* (*Laws* 895 E-896 A), probably appeared to Aristotle to support his contention that the soul which Plato made the *ἀρχὴ κινήσεως* had potency and not actuality for its essence (*Metaphysics* 1071 B 14-20, see notes 298 and 311 *supra*), but there is no reason to suppose that *δυναμένην* here means a "possibility" of moving itself rather than the positive power the activity of which is soul, and the phrasing seems to have been determined only by the contrast with motion which is *powerless* to move itself (*Laws* 894 B)

[880] Cf. Syrianus, *Metaph*, p 45, 25-28· . . . *ὥσπερ τοῦ κινεῖσθαι τοῖς πᾶσι τὸ αὐτοκίνητον αἴτιον καὶ τούτῳ δὲ ἡ αὐτοκίνησις* . . . . On the general criticism of the ideas as mere potencies see pages 452-453 *infra*

[881] Brochard and Dauriac (Brochard, *Etudes de Philosophie Ancienne et de Philosophie Moderne*, pp. 108-10), who identify the "matter" of the *Timaeus*

misinterpretation of the *psychogonia* in the *Timaeus*, made "otherness" the principle of motion (*frag.* 68, see note 366 *supra*); and his doctrine and Hermodorus' classification of κινούμενον may have been in Aristotle's mind, as the position of κινούμενον in the Pythagorean table certainly was, when he referred to those who make motion "otherness," "inequality," and "non-being." Plato, however, he clearly meant at least to include as the chief exponent of this notion (see note 305 *supra* on *Physics* 201 B 16-202 A 3 and *Metaphysics* 1066 A 10-26), and to Plato he ascribed the identification of motion with otherness and non-being chiefly because of his own interpretation of the "receptacle" of the *Timaeus* which he treats as Platonic matter and quite unjustifiably identifies with "otherness" and then with absolute non-being (see pages 91-96 *supra*). Nevertheless, though this identification is a misinterpretation and though, since the "creation" of the *Timaeus* was not meant to be taken literally, the precosmical chaos cannot be cited as evidence of motion which is prior to soul (see

with the idea of otherness in the *Sophist* and so with the otherness of the *psychogonia*, openly assert not only that the receptacle of the *Timaeus* is part of the world of ideas (which Plato himself explicitly denies [*Timaeus* 52 C, see page 118 *supra*]) but also that the idea of otherness is the idea of motion. In Robin's construction "le mouvement est dans les Idées, puisqu'elles comportent le Non-être de l'altérité et que chaque Idée, prise en elle même, est un arrêt dans la communication incessante des Genres entre eux" (*Idées et Nombres*, p. 593 [see also note 366 *supra*]). Siebeck, who interpreted *Sophist* 248 D-E (on which see note 376 *supra*) to mean that "die Erkenntnis der Ideen bedingt zugleich die Anerkennung ihrer dialektischen Beweglichkeit," asserted that by the motion among the ideas is meant the κοινωνία τῶν γενῶν (*Zeitschrift für Philos. und philos. Kritik*, CVIII [1896], p. 16), and Stenzel apparently means the same thing when in reference to the *Sophist* he speaks of "die Bewegung der Ideen, die zunachst eine innerhalb der Seinsregion sich abspielende 'dialektische' Bewegung war" (*Metaphysik der Altertums*, p. 160). The *Sophist*, however, plainly disallows all such interpretations. Absolute motion is an idea like the other ideas (*Sophist* 254 B-D, cf. Cornford, *Plato's Theory of Knowledge*, pp. 274-8 and Grube, *Plato's Thought*, p. 42), one of the γένη among which there is κοινωνία (*Sophist* 256 A-B), it can neither be identified with that κοινωνία nor considered its source or its derivative. Moreover, Plato says nothing of a dialectical movement or mobility of the ideas; on the contrary, any "dialectical movement" must be that of the soul, for knowledge or thought implies movement of the subject but immobility of the object (*Sophist* 249 B-C [see note 374 *supra*]).

pages 414-431 *supra*), it is still possible that Plato did somehow connect motion with the nature of what Aristotle calls his "material principle" (see pages 384-387 and 118-123 *supra*).

He did regard the continual flux of all phenomena as a consequence of the instability which characterizes all falling short of the real being of the ideas (see pages 211-220 and 437-438 *supra*), so that here he might seem to admit motion the cause of which is not the idea of motion or its manifestation, the self-motion which is soul.[882] Moreover, in the *Timaeus* the receptacle is said to be everywhere in disequilibrium and, swaying unevenly, to be shaken by the dissimilar qualities which fill it and to shake them in turn, so that the receptacle itself, or what Aristotle calls Platonic matter, would appear to be a cause of motion (*Timaeus* 52 D-53 A; cf. 57 C, 88 D). This, to be sure, is a description of the precosmical chaos, which as such is "mythical"; but it represents in isolation one aspect of the universe as it exists, the random and disorderly effects of ἀνάγκη or the "errant cause" (*Timaeus* 47 E-48 A, see pages 421-422 *supra*) How this cause produces motion within the universe (cf. 48 A 5-7) is explained in *Timaeus* 57 D-58 C, the passage on which Aristotle chiefly depends for his contention that Plato connected motion and the perpetuity of motion with his material principle (see page 122 and notes 91, 305, 306 *supra*). There it is stated that motion requires a mover and a moved which are distinct and heterogeneous, that the requisite heterogeneity in the universe is caused by the inequality of the corpuscles of the primary bodies, and that this heterogeneity is constantly preserved because within the closed universe corpuscles moving in any direction clash with others of unequal size so that there is a continual disintegration and reformation of corpuscles which thus changing their size change the direction of their motion. So what was described as motion of the receptacle caused by its contents and causing these contents to move is by this analysis revealed to be the action upon one another of heterogeneous corpuscles, which, to be sure, are themselves simply

[882] So Vlastos (*Class. Quart*, XXXIII [1939], p. 82) insists that Plato cannot have considered soul to be the cause of the disorderly motion of flux Rivaud, taking the precosmical chaos literally, also interprets soul as the principle of *regular* movements only (*Le Problème du Devenir*, n. 798).

characterizations of the receptacle within the limits of determinate configurations (see pages 114 [with note 73], 152-153 *supra*). This is an explanation in physical terms of the continual flux of phenomena; but the question remains whether Plato believed that he was thus explaining only the conditions necessary for the transmission of physical motion[883] and the perpetual presence of these conditions or that he was giving the sufficient cause of such motion

Since according to Platonic principles soul is the ultimate source of all physical motion, it has been maintained by some interpreters that an irrational element in the world-soul, by others that evil soul must be the cause of the random disorder which, represented in abstraction by the mythical chaos, is actually present in nature at all times and is only "for the most part" made subservient to the purposes of reason.[884] To this

[883] Both Taylor (*A Commentary on Plato's Timaeus*, p 396) and Cornford (*Plato's Cosmology*, p. 239 and p 240, n 1) recognize that what is said of motion here (57 D-58 C) has no reference to soul as self-motion and the cause of motion but only to that which, being moved by something else, transmits motion to another thing Plato is fulfilling his promise (48 A 5-7) to explain how the "errant cause" produces motion, and this "errant cause" or ἀνάγκη is the class of causes ὅσαι ὑπ' ἄλλων μὲν κινουμένων ἕτερα δὲ ἐξ ἀνάγκης κινούντων γίγνονται and τὸ τυχὸν ἅπαντον ἑκάστοτε ἐξεργάζονται (46 E), the ninth class or secondary motion of the *Laws* (894 C, 895 B, see note 342 *supra*) By the same token Robin is mistaken in supposing that the distinction of mover and moved in 57 D-58 C is applicable to the ideas and the receptacle respectively (*La Physique dans la Philosophie de Platon*, p 43, *Platon*, p 237). The heterogeneity of which the cause is the inequality of the corpuscles obviously cannot be a relation existing between the receptacle and the ideas or the soul; and, if by the motion here said to require the heterogeneity of mover and moved Plato had meant the action of soul or ideas upon the receptacle, he would have had no need to explain how the requisite heterogeneity is perpetually maintained nor would the explanation here given have been anything to the point.

[884] For the thesis of an "irrational element in the world-soul" see, for example, Cornford (*Plato's Cosmology*, pp 176-7, 205-6, 209-10) who rejects (*op. cit*, p 203) Plutarch's theory of a precosmical irrational soul reduced to order by the demiurge (*De An. Proc*, 1014 A-1017 C, 1022 E-1027 A, see notes 360 and 365 *supra*) but who is like Plutarch in insisting that the disorder and evil in the universe can be caused only by some element in the world-soul which is not entirely subdued by reason Wilamowitz (*Platon*, II, pp 314-22, especially 320-21), denying that Plato ascribed an irrational element to the world-soul, argues that the disorderly motion in the *Timaeus* must be caused by the evil

it has been objected, however, that the *Timaeus* says nothing of irrational motions of the world-soul, that a disorderly motion of soul could not be accounted for anyway if soul is the cause of all motion, and that the "mechanical explanation" in *Timaeus* 57 D-58 C makes it unnecessary to postulate an evil soul as the cause of chaotic motion.[885] Certainly there is in the *Timaeus* no hint of such an evil soul,[886] nor is there any justification for assuming an irrational element in the world-soul not only is the motion of the world-soul *as a whole* called "ceaseless and intelligent life" (*Timaeus* 36 E), but ἀνάγκη or the "errant cause" cannot be identified with soul of any kind since it is the second class of causality expressly distinguished as the motion necessarily transmitted by an object which has itself been set in motion by something else (*Timaeus* 46 E, see note 383 *supra*).[887] Nevertheless, the very fact that

soul referred to in the *Laws* (896 E, 897 A-B, 898 B C), and in this he is followed, though with some hesitation, by Grube (*Plato's Thought*, p 147, n 1).

[885] Vlastos, *Class. Quart.*, XXXIII (1939), pp 78 and 80-81; see note 382 *supra* Vlastos is mistaken when he says that *Timaeus* 57 E is a mechanical explanation of *all* motion, for it does not apply to self-motion at all, in which there is no distinction of mover and moved (see pages 411-413 *supra*) or to the moving of body by soul (see note 383 *supra*). He is likewise mistaken in calling (*op cit*, p 80) ἡ περὶ τὰ σώματα γιγνομένη οὐσία of *Timaeus* 35 A an *ingredient* of soul (see page 409 and note 337 *supra*), but these points may be passed over here (see note 366 *supra*) as may his general conclusion that the precosmical chaos is to be taken literally (see notes 362, 364, 365 *supra*), for this might be wrong without affecting his interpretation of the cause of disorderly physical motion *within* the universe

[886] Cf. Burnet (*Greek Philosophy*, I, p 342), Theiler (*Zur Geschichte der teleologischen Naturbetrachtung*, p. 80); and even Zeller (*Phil Griech*, II, 1, pp 973, n 3 and 765, n 5) who, while insisting that in the *Laws* an evil world-soul is really assumed, regards this as a development of doctrine not to be found in the *Timaeus* or earlier writings (*op cit.*, p. 973, n 4)

[887] Cornford tries to make the circle of the Different symbolize the irrational motions in the world-soul (*Plato's Cosmology*, pp 76 and 208). His attempted analogy between the hypothetical disorder which would be caused by the "uncontrolled revolution of the Different" and the disorder in the "infant soul" (*op. cit*, p 208, cf. p. 205) does not hold, however, for in the latter case the revolution of the Different is not "uncontrolled" but is distorted by motions from without (*Timaeus* 43 C-44 A; cf. also Vlastos, *op cit.*, p 78). In fact, Cornford elsewhere (*op. cit.*, p. 210) calls both circular revolutions "revolutions of the Reason" and "irrational motions" the six motions which are expressly *not* motions of the world-soul (cf *Timaeus* 34 A, see note 315 *supra*). What is

this transmitted motion is called *secondary* causality shows that in the *Timaeus* too it is meant to be somehow dependent upon the primary causality of psychical motion (see page 428 *supra*) just as it is expressly said to be in the *Laws*.[888] It is, in fact, an invalid disjunction which most interpreters assume that either soul is, after all, not the cause of all motion or else it must be evil soul or an irrational element in the world-soul which produces the random and disorderly motions in the universe. Plato undoubtedly believed that there are souls in the universe which cause evil; and it is quite explicable on his principles that there should be, since any self-motion the mode of which is not determined by a full and constant vision of the ideas and especially of the idea of good may be disorderly and so have a disorderly effect.[889] This is not to say, however, that

more important, however, he says that the causes symbolized by the chaotic motions are causes of the "lower order," "secondary causes" (*op cit*, p 209, cf p 229), by this "lower type of causation" designating the secondary causality of *Timaeus* 46 E which "transmits motion or change from one body to another" (*op. cit*, pp 172 and 239) and which, therefore, cannot be the causation of soul, rational or irrational

[888] Cf. *Laws* 894 E-895 B, 896 A-D, 896 E-897 B, see notes 340 and 342 *supra*. It is an implicit contradiction for Erich Frank to identify the chaotic motion of the *Timaeus* with the secondary motion of the *Laws* and at the same time to insist that this motion is independent of soul (*Plato und die sogenannten Pythagoreer*, n 295), but the self-contradiction becomes explicit when he goes on to assert that the world-soul is "die Quelle aller Bewegung in der Welt uberhaupt" (*op cit.*, n 298) A E. Taylor, on the other hand, seems to deny that there are any random or chaotic motions at all when, commenting on *Timaeus* 46 E 5-6, he says "All that is meant is that *if* a mere mechanism were left undirected, to work of itself, the results would be casual" (*A Commentary on Plato's Timaeus*, p 293) and again (*op. cit*, p 301, cf. p 491) "If we could ever have complete knowledge, we should find that ἀνάγκη had vanished from our account of the world." Such an interpretation is surely impossible (cf Cornford, *Plato's Cosmology*, pp 164-5, 172-3), for the ἀνάγκη which combines with νοῦς as a constitutive factor of the universe is not merely some limitation of human knowledge any more than the νοῦς in question is human understanding but is itself a kind of motion (*Timaeus* 48 A 5-7, mistranslated by Taylor, *op. cit.*, p 304; cf Shorey, *Class. Phil.*, XXIII [1928], p 356 and Cornford, *Plato's Cosmology*, p. 160, n 2) Nor is this secondary motion simply the "indeterminate mobility" of the receptacle which becomes physical motion when it is "determined" by the autonomous motion of soul (so Moreau, *L'Ame du Monde*, pp. 69-70).

[889] For evil souls cf. *Laws* 896 E, 904 B-E, 906 B; *Republic* 353 E; *Charmides*

even in the *Laws* he envisages an "evil world-soul," the adversary of the intelligent world-soul of the *Timaeus*,[890] and, whether he does or not, he does not in any case restrict to evil soul the psychical self-motion which in the *Laws* is explicitly declared to be the source of all secondary motions (see note 388 *supra*). Body is moved by soul, whether good or evil, with purposive motion; but the motion of any body so moved necessarily moves another body with motion which is neither intelligent nor purposive but merely random. So even intelligent soul in acting upon the phenomenal world, which has no source of motion in itself, must cause disorderly motion as a consequence incidental to the motion of its purpose This is the ἀνάγκη or "errant cause" of the *Timaeus*, the secondary corporeal motions which are a hindrance to the intelligent purpose of which they are the necessary incidental result. "By persuasion," however, intelligence controls these secondary motions for the most part (*Timaeus* 48 A), for once produced they can be employed as auxiliary by the primary, psychical motions which are their ultimate source.[891] This relation of the "errant cause" to psychical motion is exemplified rather than contradicted by *Timaeus* 57 D-58 C. Plato does not here explicitly mention soul as the ultimate cause of the motion described, but one cannot conclude that he therefore means to give a "mechanical explanation" in which heterogeneity is

156 E. *Laws* 897 B (ἀνοίᾳ συγγενομένη, cf 898 B 8) gives the reason for the soul's evil (cf the reason for the goodness of the best kind of soul, Appendix XI [pages 606-608 *infra*]) On positive and negative evil in Plato's theory see notes 175 and 176 *supra*

[890] *Laws* 898 C and 899 B indicate that he does not (cf. England, *The Laws of Plato*, II, pp. 475-6) As the ἀρίστη ψυχή of 897 C and 898 C means "the best kind of soul" (see Appendix XI [page 608 *infra*]) so ἡ κακή of 897 D and ἡ ἐναντία of 898 C mean "the bad kind of soul" (cf πότερον ψυχῆς γένος at 897 B).

[891] Cf. Gueroult (*Rev. Ét Gr.*, XXXVII [1924], pp 45-50) who recognizes that the primary, psychical motions produce the secondary, corporeal motions, which constitute the errant cause, and then attempt to control them. Instead of explaining how soul does produce the secondary movements and why it must do so, however, Gueroult imposes upon Plato a vague Hegelian dialectic of thesis, antithesis, and synthesis and then makes the fatal error of identifying the secondary motions and evil soul (for the impossibility of which see pages 446-447 *supra*)

the sufficient cause of motion. All that has been said about motion in the earlier part of the dialogue is expressly taken for granted (cf 57 E 1-2); and the circular revolution of the universe, which is here said to confine in a plenum the heterogeneous corpuscles,[392] is the revolution caused by the world-soul which pervades the whole sphere (34 A-B, 36 D-E) and so must move all the corpuscles which constitute it. It moves them all, however, with a single motion of revolution Consequently, if they were all homogeneous, there would be within the physical world no motion of any part relative to any other, but, since they differ in size and configuration, being thus moved by soul they must also move one another with secondary, transmitted motion. The source of this secondary, random motion is the revolution caused by the world-soul; its effect would be completely to separate from one another the various kinds of corpuscles,[393] were it not that the spherical revolution

[392] ἡ τοῦ παντὸς περιφορὰ σφίγγει πάντα . . . (*Timaeus* 58 A) Taylor is right in his contention that σφίγγει does not imply any "inward pressure" or "constrictive force" (*A Commentary on Plato's Timaeus*, pp. 397-8) That περιφορά means "revolution," however, and not merely "circumference," as Taylor maintains, is proved by 34 A 6-7, Cornford (*Plato's Cosmology*, p 243) believes it "probable that both notions are present here, for one of the works of Reason was to endow the body of the world with spherical shape and with rotation (33 B ff)" In any case the passage invalidates the claim of Vlastos that, while 57 E shows the chaos to be in constant motion for purely mechanical reasons, this is not in contradiction with *Phaedrus* 245 D (πάντα τε οὐρανὸν πᾶσάν τε γῆν εἰς ἓν συμπεσοῦσαν στῆναι) because the latter "concerns the created heavens and earth, which do have a soul, and could not move without it" (*Class Quart*, XXXIII [1939], pp 80-81); the account in *Timaeus* 57 D-58 C, as 58 A shows, also concerns "the created heavens and earth, which do have a soul," and which, consequently, according to the doctrine of the *Phaedrus*, could not move without it

[393] At one time Cornford appears to think that the "rotary movement" itself sifts the "more mobile particles," the corpuscles of fire, towards the circumference and the less mobile towards the center (*Plato's Cosmology*, p. 246), though elsewhere he ascribed the separation to "the attraction of like to like" which "must finally be due to blind irrational impulse in the soul that animates the whole body of the world" (*op. cit.*, pp 228-29), and finally he says that, since the chaotic motions of the primary bodies are confined within the circular revolution, the more mobile bodies would tend to be thrust outwards (*op. cit.*, p 265) That the *direct* cause of the separation is not the revolution itself but the secondary motions is proved by *Timaeus* 53 A and 57 B 5-6 (where ὠθούμενα

at the same time confines them all within a closed universe· where, since there is no void, there must always be some contact of heterogeneous corpuscles and, as a result of their collisions, disintegration and reformation into different corpuscles which are according to their new size and configuration differently affected by the transmitted motion of their neighbors. So the heterogeneity which is a condition of the continual process of the phenomenal world is constantly preserved. It is the manner of this preservation that *Timaeus* 57 D-58 C is concerned to explain; but, if the passage is not isolated from the first part of the dialogue—as the backward reference (57 E 1-2) and the presence of the circular revolution prove that it should not be—it also explains how the flux of phenomena is the complex of secondary motions produced incidentally by the world-soul in moving the heterogeneous body of the world.

So the rôle assigned to heterogeneity and inequality in physical motion does not impair the doctrine that soul as self-motion is the principle of all motion and change any more than does the assumption of an idea of motion, but the three factors together constitute a single and consistent theory. Nevertheless, this theory is not expounded in the *Phaedo*; and it is the *Phaedo* upon which Aristotle relies to prove that there is no efficient cause of change in the Platonic system, contending that there the cause of generation and destruction is said to be the ideas themselves and that this is an impossible doctrine (*Metaphysics* 991 B 1-9 = 1079 B 35-1080 A 8, 992 A 24-29; *De Generatione* 335 B 7-24 [see pages 379-380 *supra*]). Now, even if this

καὶ διαλυθέντα means "extruded and so liberated" [cf., for διαλυθέντα, *Laws* 904 D 3-4]). According to *Timaeus* 55 E-56 A the corpuscle of earth is hardest to move, then the corpuscles of water and air in that order, and that of fire easiest For this reason, as the corpuscles jostle one another in the revolving plenum, those of earth would tend to settle at the center and next to them the corpuscles of water, while those of air and fire would be thrust out towards the circumference in that order So the "drift" which tends to separate the great masses of like corpuscles in their own places would be explained and also the apparent "attraction of like to like," which has been called an ultimate, unexplained assumption in the *Timaeus* (Cornford, *op cit.*, pp 169, 199, 244, 265) but which Plato could not have meant to be a real force of attraction, since he expressly banishes this notion from physical theory (*Timaeus* 80 C, see note 306 [page 387] *supra*)

criticism were valid as against the *Phaedo*, it would hardly be just or sound for Aristotle to judge the theory of ideas in this matter by that dialogue alone and silently pass over the account of motion and change in the *Phaedrus* and the *Timaeus*;[894] but, furthermore, the criticism of Anaxagoras in the *Phaedo* (97 C-99 D) implies, as has been seen, that Plato even then believed soul to be the true cause of all motion (see pages 433-437 *supra*), and the fact that he calls the method there used a δεύτερος πλοῦς ἐπὶ τὴν τῆς αἰτίας ζήτησιν (99 C 9 f.) indicates that he already had in mind the account of causality given in the *Timaeus*, for the method which he would call πρῶτος is that which seeks in every thing and event the analogue of the cause of Socrates' remaining in prison, namely his conception of what is best, and does not mistake for cause what are only the necessary physical conditions of the effectiveness of cause.[895] At any rate, whether or not Plato when he wrote the *Phaedo* had clearly integrated the causality of the ideas and that of soul, the two are certainly not incongruous and were never considered by him to be other than complementary factors in the full account.[896] In spite of what some modern interpreters have

[894] It cannot be supposed that the criticism in question was written before Aristotle knew these dialogues, for in *Metaphysics* 992 A 24-B 9, which is a unit belonging to the same context as 991 B 1-9 and like it probably comes from the περὶ ἰδεῶν (see notes 132 and 290 *supra*), 992 B 1-9 presupposes his interpretation of the "material principle" of the *Timaeus* (see pages 121-123 *supra*), while *De Generatione* 337 A 7-15, which certainly is not "later" than 335 B 7-24 refers to *Timaeus* 58 A (see note 91 *supra*) and 336 B 27-34 was suggested by the same dialogue (see note 352 *supra*) On the supposed relation of *Metaphysics* 991 A 22-23 to the *Timaeus* see note 294 *supra*.

[895] *Phaedo* 98 C-99 B and 97 C-D; cf *Timaeus* 46 C 7-D 4, 68 E-69 A Socrates in the *Phaedo* calls his method a "second best" not in respect of that of the "physical philosophers" but of that which he expected from the promise of Anaxagoras who disappointed him in the event; cf. Shorey, *Class. Phil.*, XIX (1924), pp 6-7 and *What Plato Said*, p 534, N. R. Murphy, *Class Quart.*, XXX (1936), pp 40-47 (especially 41-43).

[896] De Lacy (*Class Phil*, XXXIV [1939], pp. 97-115) recognizes "the causal function of the soul" in the earlier dialogues (p. 106); but, although he says that the doctrine of the *Phaedrus* is a "natural extension" of Plato's earlier statements about soul (p 107), he believes that the implications of the treatment of soul as an active agent are in apparent conflict with the theory of ideas (pp 107-8), that in the early dialogues Plato fails to harmonize the causality of the ideas with the causality of soul (pp. 108-9, where he overlooks *Republic* 507 C

maintained, the ideas themselves are never made productive agents either as "animate beings" or as "active forces" of any kind [897] On the other hand, they are not mere potencies

and 529 D-530 B [see Appendix XI, page 609 *infra*] when he says that nowhere in the earlier dialogues does Plato suggest a divine artisan), and that in the later dialogues the causality of soul replaces the causality of the ideas (pp 110 and 112) Friedlander more reasonably sees the doctrine of soul in the *Phaedrus* not as a "substitute" for the central doctrine of the *Phaedo* but as a "new approach" to it (*Platon*, I, p 222), and Grube, though holding the doctrine of the *Phaedrus* to be new (*Plato's Thought*, pp 139-40), says that Plato uses it ' to bridge the abyss between the eternal realities and the physical world" (*op cit*, pp 160-61, cf p 147, and cf. Barth, *Die Seele in der Philosophie Platons*, pp 56, 312-13)

As further evidence of the change in Plato's attitude towards reality and the physical world (see also the references in note 367 *supra*) De Lacy cites the use in the *Philebus* of γεγενημένη οὐσία (27 B) and γένεσις εἰς οὐσίαν (26 D) to designate the physical world as a "mixture" of πέρας and ἄπειρον and the process of that mixture respectively (*op cit*, p 109) These phrases, the κατὰ τὴν τῆς γενέσεως ἀναγκαίαν οὐσίαν of *Politicus* 283 D, and the ἄγειν εἰς οὐσίαν by which production is defined in *Sophist* 219 B (quoted in connection with Aristotle's criticism in note 18 *supra*) have frequently been said to be at variance with the "earlier" opposition of οὐσία and γένεσις (e g Burnet, *Greek Philosophy*, I, pp 331-2, Taylor, *A Commentary on Plato's Timaeus*, pp 86-7, Robin, *Platon*, p 155, cf. Ritter, *Platon*, II, pp 156 8, Rodier, *Études de Philosophie Grecque*, pp 39-41, who for this reason takes γένεσις εἰς οὐσίαν to be the "logical generation" of the ideas, which he puts into the class of μικτόν [against which see Appendix XI, pages 603-604 *infra* on Festugière who in this follows Rodier]) It is certain, however, that Plato attached no such significance to these expressions (cf Grube, *Plato's Thought*, p. 303), for the *Philebus* distinguishes ὄντα and γιγνόμενα as sharply as does any of the earlier dialogues (59 A-B) and in the *Symposium*, which is admittedly typical of those earlier dialogues, Socrates defines production as ἡ ἐκ τοῦ μὴ ὄντος εἰς τὸ ὂν ἰόντι ὁτῳοῦν αἰτία (205 B), the same definition as that which in the *Sophist* is supposed to express the change in Plato's attitude

[897] This notion, the most influential exponent of which has been Zeller (*Phil. Griech*, II, 1, pp 686-98; cf also Chevalier, *La Notion du Nécessaire chez Aristote*, pp. 83-86) has been refuted by Brochard (*Études de Philosophie Ancienne et de Philosophie Moderne*, pp. 139-41), Diès (*Sophiste*, pp 286-90), Grube (*Plato's Thought*, pp. 295-6), and also by Hoffmann (Anhang zu Zeller, *Phil. Griech*, II, 1, pp 1089 98) and Faust (*Der Möglichkeitsgedanke*, I, pp 59-62) who follows Hoffmann, however, in making an exception of the idea of good in so far as this is "personified" by the demiurge (see Appendix XI, page 603 *infra*, but cf Faust, *op cit*, p 45, n 1). It depends chiefly 1) upon taking *Sophist* 247 E to be a serious Platonic definition of being as δύναμις, whereas it is a provisional definition advanced for polemical purposes (cf Diès,

as Aristotle tries to make out by treating them as one term of a contrariety which therefore exist potentially (see note 298 and pages 102-104 *supra*) or, what comes to the same thing, by arguing that they are forms of a substrate and so, "separated" from the substances of which they are forms, can be only the possible characteristics or activities of those substances (see pages 333-334 *supra*), even by his own criterion they should be considered fully actual just because they are entirely immaterial and are universal not in the sense of extension, which is the possibility of repeated particularization, but as primary and prior to the extension which depends upon them.[898] The ideas, then, are for Plato the ultimate and eternal realities in reference to which as models soul produces motion and change in the phenomenal world

Soul, being self-motion, is not tainted with potentiality either (see page 441 and note 379 *supra*), so that there is no cogent reason why the complex of this primary psychical motion and the secondary motions which are its necessary incidental result should not account for both the perpetuity of the world-process and the intermittence of generation (see pages 380-381 *supra*) Nevertheless, though soul is the cause of motion and change which according to Aristotle the theory of ideas neglects (see pages 379-380 *supra*), it can hardly be said to be the cause of participation as such.[899] That is just a "mirroring" of the

La Définition de l'Être . . dans le Sophiste, pp 17-38) or strictly not a definition at all but a "mark" or characteristic (cf Cornford, *Plato's Theory of Knowledge*, pp 238-9), and 2) upon misinterpreting *Sophist* 248 A-249 D, for the meaning of which see note 376 *supra* and Appendix XI, pages 606-607 *infra*; the mistaken assignment of the ideas to that one of the four classes called "cause" in the *Philebus* (23 D) is not another supporting argument but, as Grube says (*Plato's Thought*, p 302), a consequence of this misinterpretation of the *Sophist*, for in the *Philebus* "cause" is called *σοφία καὶ νοῦς* which could never come to be without soul (30 C, see Appendix XI, pages 605 and 607 *infra*)

[898] See pages 345-355 and 370-374 and, for Plato's conception of the ideas as eternal individuals, pages 374-376 *supra* On the absence of all potentiality from the ideas cf Faust, *Der Moglichkeitsgedanke*, I, pp 63-4 and 79.

[899] That it is appears to be the opinion of Grube, for example, when he says that without it the ideas cannot be realized at all, that the gods and the divine in men strive to realize in the mysterious matrix a physical representation of the ideas, and that the ideas "cause *τῷ γιγνώσκεσθαι*, not directly" (*Plato's Thought*, pp. 149, 171, 302) A similar interpretation is ascribed to Plutarch on the basis

ideas in space which, even as it cannot account for motion or change, cannot itself be the result of any movement of the receptacle by soul; if there were no soul, there still should appear in the unchanging mirror of space reflections, though confused and static, of the eternal ideas.[400] The ideas, then, are the *direct* source of these reflections, and it is these reflections, not space itself, which soul sets in motion, seeking to organize and regulate them and bring them nearer to conformity with the models which it knows and which thereby determine the mode of its motion (see Appendix XI, pages 606-607 *infra*, and pages 447-448 *supra*). Consequently, if Aristotle is justified in disallowing metaphor, he is justified in maintaining that ultimately no "explanation" of participation as such is given (see note 293 *supra*); after all, even the notion that soul fashions the phenomenal world after the ideas is a metaphor from pictorial art (cf *Republic* 484 C-D) and does not "explain" how the characteristics of the ideas observed by soul are by its motion translated to phenomena.

Although Aristotle's neglect of the part played by soul in Plato's theory of causality may account for his failure to appreciate the importance of the idea of good in the light of which the organizing soul knows the ideas, his apparent denial of any final cause in Plato's philosophy is, nevertheless, startling (*Metaphysics* 992 A 29-32 [page 381 *supra*], cf 988 A 7-10). His assertion that the *Timaeus* gives no cause and particularly no final cause for the rotational motion of the heaven (*De Anima* 407 B 5-12 [page 395 *supra*]) is in part the result of his literal interpretation of the dialogue but in part is evidence of careless reading or forgetfulness. Plato does speak of the rotation of the universe before the creation of soul and does not mention self-motion in the *psychogonia*; but his reasons

of *De An Proc.* 1024 B-C (cf. Helmer, *Zu Plutarchs 'De animae procreatione in Timaeo,'* pp 30-1)

[400] To this extent, at any rate, Cornford is right in saying that "the offspring of the two parents, the Forms and Space, would not be a moving process of becoming, there would be no motion" (*Plato's Cosmology*, p. 205, cf. pp. 196-7) There would still be participation, however On the receptacle as the "matrix" in which the images of the ideas are reflected cf *Timaeus* 50 C-D and 52 C on εἰκών, and for the supposed movement of the receptacle by the reflections in it and its consequent movement of them see pages 444-445 *supra.*

have been explained, and it is clear that he meant the reader to understand that soul *is* self-motion and that intelligent self-motion is the cause of the rotation of the heaven.[401] Furthermore, the *Timaeus* says that the axial rotation assigned to the universe is proper to its shape as being the motion especially connected with reason and intelligence (34 A), and a later passage explains that it is so because it is the physical result of self-consistent thought about unchanging objects (40 A 7-B 2, see notes 331 and 332 *supra*) This passage goes on to say (40 B 2-4) that the stars were assigned rotation and revolution and no other motions in order that each might be as perfect as possible, from which statement it is only fair to conclude that the same purpose was meant to be understood as applying to the rotation of the heaven as a whole. It is even stranger that Aristotle should criticize Plato for not giving the final cause of respiration (*Parva Nat.* 472 B 24-29), since in the *Timaeus* not only is the purpose of the process given but that purpose is in part at least similar to the one alleged by Aristotle himself, the cooling of the heat within the body.[402] He disregards en-

[401] See pages 424-426 and 427-431 *supra*. Themistius (*De Anima*, p 23, 14-20) argues that rotation cannot be essential to the soul because in the *psychogonia* the psychical constituents are first made into a straight strip and then bent into a circle (*Timaeus* 36 B 6-C 2 [note 314 *supra*])! Philoponus (*De Anima*, p 138, 13-15) rightly says that Aristotle's argument rests upon the assumption that he has already proved soul to be mobile not *per se* but only accidentally

[402] *Timaeus* 78 E-79 A and 70 C-D (cf Cornford, *Plato's Cosmology*, pp. 314-15 and 284, n 2), for Aristotle's account of the purpose of respiration cf. *Parva Nat.* 474 B 20-24, 475 B 15-19, 476 A 6-15, 478 A 11-25 In 472 B 6-12 Aristotle objects that the mechanism described in the *Timaeus* (79 A-E [note 306 *supra*]) does not make clear in what way ἡ τοῦ θερμοῦ σωτηρία is achieved for animals other than terrestrial This might sound like an implied assertion that Plato did make the purpose of the mechanism "the preservation (i.e the tempering) of the vital heat", but Aristotle in fact means just the opposite. if Plato intends to assign respiration only to terrestrial animals, he ought (as Aristotle does, cf 470 A 19-B 5) to start with the purpose, "preservation of vital heat," which is fulfilled in different animals in different ways, and then show why in terrestrial animals the means to this end is respiration, and, if he means that non-terrestrial animals also breathe (which Aristotle believes impossible, cf. 470 B 9-27), but in another way, he ought to explain the different kinds of respiration in relation to this purpose. In 473 A 3-14 Aristotle criticizes the opinion that respiration is for the purpose of nourishing the internal heat, the inhaled air being fuel for the fire and the exhalation the refuse of this nourish-

tirely the emphasis which Plato puts upon purpose in his account of sight and hearing (*Timaeus* 47 B-E); yet he gives the same final cause for the growth of hair on the head as Plato does (*De Part. Animal.* 658 B 2-10, cf. *Timaeus* 76 C-D) and vigorously criticizes the final cause which in connection with this Plato gives for the lack of flesh on the head, the facilitation of sensation (*De Part. Animal.* 656 A 13-B 13 [cf. also *Timaeus* 75 A-E]).[403] Plato's notion that the purpose of the lung's texture is to serve as a cushion for the throbbing of the heart in expectation or anger (*Timaeus* 70 C-D) he opposes with the argument that such throbbing occurs only in man and that in most animals the heart is at some distance from the lung (*De Part. Animal.* 669 A 18-24), a point of questionable relevance since Plato's account is restricted to the human body[404]

ment Taylor assumes that this too refers to the *Timaeus* (*A Commentary on Plato's Timaeus*, p 567) If this were so, Aristotle would be openly contradicting his own statement in 472 B 24-29; but, in fact, no such doctrine occurs in the *Timaeus* It has been observed that the immediately preceding passage, 472 B 33 473 A 2, cannot refer to Plato (see note 306 *supra*), in this one Michael Ephesius (*Parva Nat*, p 122, 9-16) sees no reference to him either but assigns the doctrine criticized simply to τινές It appears in some of the Hippocratic writings, e g περὶ φυσῶν, § 3 (VI, p 94, Littré) and περὶ σαρκῶν, § 6 (VIII, p 592)

[403] Plato's explanation of the leanness of the head Aristotle thinks sufficiently refuted by the fact that the back of the head as well as the front is without flesh To him the purpose of the brain is refrigeration and this it could not accomplish if the head were fleshy He denies that the brain is the cause of sensation, both because it is insensible to touch and because he thinks that it has no connection with the sensory organs (cf *De Part Animal.* 652 B 3-7), and he imputes this supposed mistake concerning its function to misapprehension of the reason for the location of most of the sensory organs in the head (cf. *Parva Nat.* 469 A 20-23 and *Crit Pres. Phil.*, p 286, n. 250). The notion that the brain is marrow and the source of marrow (*Timaeus* 73 C-D) arose, he says, from observation of the continuity of the spinal cord with the brain; but this continuity, he explains, is for the purpose of equalizing the heat of the marrow by means of the coldness of the brain, the fact that marrow is warm by nature while the brain is the coldest of all parts of the body and the most bloodless of all liquid parts proving that they are really opposites (*De Part Animal.* 652 A 25-B 2) He cites observation of the marrow in embryos and young animals to prove that it is a form of blood and that it is therefore not the procreative substance of the seed (*De Part Animal.* 651 B 20-28 against *Timaeus* 73 C, 91 A-B [cf Schroder's note in his *Galeni in Plat. Timaeum Comment. Frag*, pp 52-3]).

[404] In *De Part. Animal.* 664 B 6-19 Aristotle refutes the statement that drink

At least once he criticizes Plato for looking for a final cause at all, the fanciful explanation of the purpose of gall as an instrument for congealing the mirror of the liver and so disciplining the appetitive part of the soul (*Timaeus* 71 A-D) he rejects on the ground that some animals and even some men have no gall (*De Part. Animal.* 676 B 22-31), which he believes to be residual matter and so to be without any purpose (cf. 677 A 11-19) Of greater importance than any of these details, however, is the way in which when criticizing the physical philosophers he tacitly recognizes the emphasis which Plato put upon purpose as cause. When he charges that Democritus in neglecting the final cause and referring all natural processes to "necessity" mistook for cause what are really only efficient instruments and matter (*De Gen. Animal.* 789 B 2-15), the very language in which he expresses his own position is reminiscent of the distinction made by Plato (*Timaeus* 46 C-D, 68 E-69 A, *Phaedo* 99 A-B [see note 395 *supra*]); and the correct doctrine that the process of becoming is for the sake of being, the ignorance of which on the part of the "ancient physical philosophers" he ascribes to their exclusive though confused concern with material and efficient causes and neglect of the formula and final cause, is in fact an unacknowledged quotation from Plato's *Philebus*,[408] where, immediately after that doctrine is stated, that for the sake of which a process of becoming occurs is assigned to the rank of the good (*Philebus* 54 C 9-10).

The final appraisal of Aristotle's criticism that Plato made the essence of the good not goodness but unity (see pages 381-382 *supra*) must be postponed until the evidence for the doctrine of idea-numbers has been studied, although even here

is received into the lung by way of the windpipe and passes thence to the bladder. He probably has in mind chiefly the *Timaeus* where this erroneous but not uncommon conception is adopted (70 C-D, 91 A, cf Taylor, *A Commentary on Plato's Timaeus*, pp 503-4), just as he has in *Hist Animal* 496 B 4-6 where, after saying that the lung has more blood than any other organ, he remarks that those who say that it is bloodless (cf *Timaeus* 70 C 6) have been deceived by the fact that in dissected bodies the blood has already left the lung

[408] *De Gen Animal* 778 B 1-13 (especially 778 B 5-6, cf *De Part Animal* 640 A 18-19) and *Philebus* 53 D-54 C (especially 54 C 1-4) Similarly the argument from purpose in the microcosm to purpose in the macrocosm (*De Part. Animal.* 641 B 10-20) is an echo of *Philebus* 29 30

several points should be observed which recommend caution in accepting the statement upon which that criticism depends. Aristotle seems to be uncertain whether it is Unity or Being of which the Platonic good is an accident (*Metaphysics* 988 B 6-16; for his treatment of Being and Unity as two distinct Platonic ideas cf. 1001 A 4-24 [note 228 *supra*]); and in the one place where he definitely asserts the identification of the good with the one (*Metaphysics* 1091 B 13-15) he practically admits that this is an inference of his own rather than an express statement of Plato's (1091 B 20-22; cf Ross, *Metaphysics*, II, p. 488). In any case, even if this identification be admitted without question, it is peculiarly inappropriate for Aristotle to adduce it as proof that the Platonic good is not a final cause except as an accident of a cause of being, i. e. of a formal cause. There is no reason why he should deny that goodness can be as essential to such a Platonic principle as it is to his own final cause, for this too is an immaterial essence, the form of the world, and is at once the primary being, unity, and good on which all things depend for such existence, unity, and goodness as they have.[408] Furthermore, since this primary essence is also the

[408] See pages 357-364 *supra* For this principle as primary and immaterial essence, the transcendent form of the world, cf especially *Metaphysics* 1074 A 31-38 and 1075 A 11-15; as such it is a kind of Platonic idea (see pages 218-220 *supra*) It is supposed to differ from the ideas in that it is a living being (*Metaphysics* 1072 B 26-30, cf Ross, *Aristotle*, pp. 176 and 182 and Hamelin, *Le Système d'Aristote*, pp 409-10); but it is so only in a special sense of that homonymous term (cf *Topics* 148 A 23-37, Robin, *Archiv fur Geschichte der Philosophie*, XXIII [1910], p 207 and Zeller, *Phil Griech*, II, 2, pp 368-72), for its activity is the activity of immobility, not of motion (*Eth. Nic* 1154 B 24-28, see note 378 *supra*) and its life is simply the perpetual actualization of itself as an object of thought (*Metaphysics* 1072 B 14-26, 1074 B 25-1075 A 5) It is at most, therefore, a self-conscious idea, and, even so, it is final cause not *qua* thinking but *qua* being, that is *qua* form (*Metaphysics* 1072 A 25-32; cf. Ross, *Metaphysics*, I, p cxlix ["God has an influence on the universe which does not flow from His inner life of knowledge" etc], Zeller, *Phil. Griech*, II, 2, pp 373-5, and Carteron, *La Notion de Force*, pp 135-6). Some interpreters have supposed that this form comprises distinct within itself all forms, i e that God in thinking himself thinks the separate actualities of all things (cf Robin, *op cit*, p 206 and *Idées et Nombres*, pp 105-6, 495-6, Werner, *Aristote et l'Idéalisme Platonicien*, pp 358-9, Caird, *Evolution of Theology in the Greek Philosophers*, II, pp 20-23, also Brandis and Kym, referred to by Zeller, *Phil.*

prime mover of the world, Aristotle escapes the complaint that he makes against the Platonists of not specifying how the good is a principle, as end, as movent, or as form (*Metaphysics* 1075 A 38-B 1), only by making his own primary good a principle in all three senses (see note 409 *infra*).

Still more embarrassing to his own system is his argument that for the ideas at any rate, inasmuch as they are immobile, there can be no absolute good or final cause (*Metaphysics* 996 A 21-29 [page 383 *supra*]). By that reasoning the several immobile movers of the celestial spheres in his cosmology could not be related as to a final cause to that primary essence which he nevertheless proclaims as the final cause of all the universe,[407] nor, for that matter, could any of the forms, since all

Griech, II, 2, pp 381, n 4 and 382, n 1), and have sought support in the references to νοῦς as τόπος εἰδῶν and εἶδος εἰδῶν (*De Anima* 429 A 27-29 and 432 A 2, cf Robin, *Idées et Nombres*, n 443) In the former of these passages, however, Aristotle was certainly not thinking of God (cf ἀλλὰ δυνάμει τὰ εἴδη) and probably not in the other either, nor can the metaphor of general and army (*Metaphysics* 1075 A 11-25) be used, as Caird uses it, to make God think the world "in its order" (cf 1075 A 18-19 [πρὸς ἓν ἅπαντα συντέτακται] and *Eth Eud* 1249 B 13-16 which reads like a commentary on this [οὐ γὰρ ἐπιτακτικῶς ἄρχων ὁ θεός, ἀλλ' οὗ ἕνεκα ἡ φρόνησις ἐπιτάττει κτλ]) In any case, the interpretation cannot stand in the face of Aristotle's explicit statements that only the most divine and valuable can be the object of this consciousness and that because it is itself the best it must itself be that object (*Metaphysics* 1074 B 25-26 and 33-35, cf 1072 B 18-19), the very argument that thought of anything but the best would involve transition and motion (1074 B 26-27) shows how far from Aristotle's mind was the conception that consciousness of itself could somehow include or imply consciousness of other forms Cf also Ross, *Metaphysics*, I, p cxlii and Zeller, *Phil Griech*, II, 2, p 371, n 1 and pp 381-3.

[407] For the immobile movers, the number of which is equal to that of the celestial spheres, cf *Metaphysics* 1073 A 26-B 1 and 1074 A 14-16 (Ross' text and note *ad loc*) The number of these Aristotle determines by adding counteracting spheres to the system of Eudoxus as corrected by Callippus, although he refuses to be dogmatic about the astronomical reckoning itself (1073 B 3-1074 A 31 on which cf Heath, *Aristarchus of Samos*, pp 197, 217-20 and Ross, *Metaphysics*, II, pp 393 4) Since he rejects the "episodic" result of a multiplicity of principles and insists upon a single ruler of the universe (1075 B 37-1076 A 4), an immobile mover of all things upon which all the universe depends (see note 299 *supra*), he undoubtedly envisaged some sort of hierarchy of the movers of the spheres under that primary essence (1073 B 1-3, *De Generatione* 337 A 17-22, and cf the attempt in *De Caelo* 291 B 24-293 A 14 to give a teleological explanation of the different number of motions of the different heavenly

of them are moved, if at all, only accidentally, being themselves *per se* immobile movers (cf. *Physics* 198 A 34-B 4 [see note 408 *infra*]). To distinguish between the end or goal of action and the "beneficiary" of it and say that the immobile entity is final cause in the former and not the latter sense (*Metaphysics* 1072 B 1-3) does not meet this difficulty, although modern interpreters seem to think that it does (cf. Bonitz, *Metaphysica*, pp. 499-500; Ross, *Metaphysics*, II, p 376 [but contrast I, pp. 227-8]), for the contention was not that no immobile entity could *be* a final cause but that none could *have* one; and if, on the other hand, the beautiful is distinguished from the good as the more inclusive from the narrower term and admitted to be the final cause of order and determinateness without being the goal of action (*Metaphysics* 1078 A 31-B 6 [see page 383 *supra*]), the argument against a final cause for the immobile ideas is reduced to a mere quibble.

bodies striving to attain the good which the unmoved mover has directly since it is itself the final cause [see Appendix X, pages 586 587 *infra*]) Yet he never indicates how they are related to one another or to that prime mover (cf Bonitz, *Metaphysica*, p 505) Theophrastus criticized this flaw in the theory (*Metaph.* 5 A 14-21), and one certainly cannot suppose that Aristotle meant the movers of the spheres to be moved by the prime mover ὡς ἐρώμενον (so Ross, *Metaphysics*, I, p cxxxvi), for he insists that they, like it and for the same reason, must be immaterial, eternal, and *per se* immobile (1073 A 36 B 1) and even the *accidental* motion referred to in the *Physics* (259 B 28-31) is not the result of any influence of the prime mover on them (so apparently Hamelin [*Le Système d'Aristote*, pp 357-8], whose refutation by Mugnier [*La Théorie du Premier Moteur*, pp 172-3] is invalid, however, since the latter simply disregards the relevant passage of the *Physics*) or of their own influence upon their spheres, as is the case with soul which moves itself *accidentally* by moving the body (cf *Physics* 259 B 16-20 and *De Anima* 408 A 30 34), but results from the fact that every sphere while moving directly under the influence of its own immobile mover is at the same time carried round mechanically by the motion of the sphere next above it (cf *Metaphysics* 1073 B 38-1074 A 5) and carries its own mover in this motion (It should be observed that the passage just cited, especially εἰ μέλλουσι συντεθεῖσαι πᾶσαι τὰ φαινόμενα ἀποδώσειν and 1074 A 3-4, shows the unnecessary multiplication of spheres remarked by Heath [*op cit.*, p. 219] to have been simply an oversight on Aristotle's part [cf Zeller, *Phil Griech*, II, 2, p 462, n 1]) The logical result is that the influence of the supreme final cause on all spheres below the first heaven is not direct and is mediated to them not by way of their own immobile movers but instead mechanically through the physical spheres above them and thus *through them* to their own immobile movers, which

What has especially astonished critics, however, in Aristotle's treatment of the ideas as immobile entities is that, in spite of his own doctrine of an immobile mover, he contends that the immobility of the ideas prevents them from being causes of motion or change for sensibles (*Metaphysics* 991 A 11 = 1079 B 14-15, see page 377 and note 291 *supra*).[408] To these critics he could perhaps reply that, whatever his own doctrine might be, for Plato with his theory of self-motion immobile entities could not be the causes of motion and that, anyway, it is *efficient* causality that he is denying to the ideas, so that his objection is not even inconsistent with his own doctrine of an immobile entity moving as *final* cause.[409] Consistent or not

consequently can have at best an *accidental* relation to the prime mover of the universe[1]

[408] Cf Syrianus, *Metaph*, p 116, 19-21, Robin, *Idées et Nombres*, p 107, Le Blond, *Logique et Méthode chez Aristote*, p 389, n 4 In *Physics* 198 A 35 B 4 both the prime mover and the essential forms are said to be immobile causes of natural movement and are called ἀρχαὶ οὐ φυσικαί because they have in themselves no κίνησις or ἀρχὴ κινήσεως This ἀρχὴ κινήσεως is, of course, an ἀρχὴ τοῦ κινεῖσθαι, the absence of which does not according to Aristotle's reasoning imply the lack of an ἀρχὴ τοῦ κινεῖν (cf for the distinction *Physics* 255 B 30-256 A 3 and see note 163 *supra*), so that from the immobility of the ideas alone he should not conclude their incapability of causing motion. If an agent is *not* impassive or a movent immobile, this is because it is materiate, and, although Aristotle denies that certain agents can be separate from matter, whatever immaterial agents there are he says are necessarily impassive, τὸ πρῶτον ποιοῦν corresponding in this way to the prime mover which is immobile (*De Generatione* 324 B 4 13 and 18 22) To be sure, in this context, contrary to his ordinary usage, he distinguishes final cause from τὸ ποιητικόν, which is cause as the source of motion, so that forms and τέλη would in strictness not be efficient causes (*De Generatione* 324 B 13-18, see note 409 *infra*)

[409] Philoponus (*De Gen*, pp 152, 28-153, 2), commenting on *De Generatione* 324 B 13-18 (see note 408 *supra*), takes the occasion to remark that this passage shows why Aristotle makes God not ποιητικόν but τελικὸν αἴτιον Alexander and other Peripatetics also held that he made the final cause κινητικόν but *not* ποιητικόν (Simplicius, *Phys*, p 1362, 11-20, cf p 1360, 24-31) Following Ammonius, who wrote a whole book to prove that according to Aristotle God is τὸ ποιητικὸν αἴτιον τοῦ παντὸς κόσμου, Simplicius himself argues that Aristotle's prime mover is both τελικόν and ποιητικόν (*Phys*, pp 1361, 11-1362, 20, 1363, 8-24, cf p 365, 20-29) This, he says, follows from the definition of ποιητικὸν αἴτιον as τὸ ὅθεν ἡ ἀρχὴ τῆς κινήσεως and the fact that νοῦς or the immobile cause is ὅθεν ἡ τῆς οὐρανίας προσεχῶς κινήσεως ἀρχή, for through the mediation of the celestial motion the immobile mover is the source of the sublunar motions

with his own doctrine, Aristotle's objection is in any case irrelevant, since Plato did *not* consider the ideas to be causes of motion and change directly, though they are the causes of the *direction* of motion and of *what* things are and become (see pages 450-454 *supra*); but it does raise the question how Aristotle himself supposes his immobile mover to produce motion, and here there is genuine reason for astonishment. He dismisses as meaningless poetical metaphors the assertions that the ideas are "models" and that other things "participate" in them (*Metaphysics* 991 A 20-22 = 1079 B 24-26; see page

(see note 299 *supra* and cf the criticism of Theophrastus, *Metaph.* 5 B 21-26). In support of his interpretation he adduces *Physics* 194 B 29-30, *De Caelo* 271 A 33 and 279 A 25-30, *De Generatione* 318 A 1, *Metaphysics* 984 B 15-22 and observes that Alexander himself on *De Generatione* 318 A 1 wrote that the prime mover is αἴτιον ποιητικόν of the movement of the divine body and on *Physics* 198 A 27-31 that according to Aristotle ποιητικά are also immobile. Ross contends (*Metaphysics*, I, p cxxxiv) that, since οὗ ἕνεκα is one kind of ἀρχὴ κινήσεως, the opposition of the one to the other is ill chosen, that God for Aristotle is certainly ἀρχὴ τῆς κινήσεως and therefore "efficient cause" of change, but that this is not the kind of efficient cause which is a force operating *a tergo* Now, Aristotle did certainly maintain that in his system final and efficient cause can coincide (cf *Physics* 198 A 24-27, *De Part. Animal.* 641 A 25-27, and especially *Metaphysics* 1075 B 8 10); but, for all that, he also formally asserts that "opposition" of the two which Ross considers ill chosen (cf. *Metaphysics* 983 A 30-32, 996 B 23-24). Nor is it so certain that he ever achieved a perfectly clear conception of the causality of his prime mover. Even De Corte, who tries hard to make all his statements converge in the view that it is "motive because final," has to admit that there is "un certain flottement dans ses idées sur ce sujet" (*Aristote et Plotin*, pp. 163-4), and Le Blond shows that there is in fact a continual oscillation between two quite different points of view in Aristotle's treatment of the problem (*Logique et Méthode chez Aristote*, pp 383-92) One of these is the point of view of "mechanical efficiency" or quasi-physical impulsion which Ross quite without warrant would reduce to a mere "incautious expression" and as such disregard (*Metaphysics*, I, p cxxxiv). From this point of view Aristotle does treat the prime mover as an immaterial and immobile substance exercising a force *a tergo* (*Physics* 267 A 21-B 26 [n. b 267 B 6-9]) Its immateriality is deduced simply from the fact that the force which it exercises must be infinite (*Physics* 267 B 17-26 [so also *Metaphysics* 1073 A 5-11 where as pure finality it should not "exercise force" at all]) and has nothing to do with the nature of its causality which is the same kind of "efficiency" as that of the corporeal motionless mover operating *a tergo* in Aristotle's theory of projectiles (*Physics* 267 A 5-8 [see note 306 *supra* and cf. Carteron, *La Notion de Force*, pp. 24 and 185]).

377 and note 293 *supra*) Yet it is sheer metaphor with which he explains that his final cause moves the world "as an object of love" (*Metaphysics* 1072 B 3 [cf. Plato, *Philebus* 53 D-E]) and metaphor with which he accounts for the lack of reciprocal contact when the immobile mover "touches" what it moves as one "touches" another in grieving him without being "touched" himself (*De Generatione* 323 A 25-34; cf *Physics* 258 A 20-21) [410] To be sure, he has specific objections to the appropriateness of Plato's particular metaphor no productive agent functions by looking to the ideas, and, even if there are such eternal entities which sensible particulars resemble, they need not be the "models" of the latter any more than Socrates is the "model" of a man who resembles him (see page 378 and note 294 *supra* on *Metaphysics* 991 A 22-27 = 1079 B 26-30). The second of these objections, assuming that the ideas are just "eternal sensibles" (see note 212 *supra*), treats the "similarity" of particulars to them as equivalent to the similarity of particulars to one another (cf. the assumption of the "third man" argument [see pages 293-300 and 307-312 *supra*]) and neglects the Academic attempts to demonstrate that "similarity of particulars" necessarily implies the existence of a model of which all similar characters are derivative likenesses (see pages 229-233 and 275-279 *supra* on Alexander, *Metaph.*, pp. 82, 11-83, 17 and 83, 17-22). The first again disregards Plato's explanation that soul, the cause of physical motion and change, is determined in the kind of motion which it causes by its contemplation of the ideas (see pages 450-454 *supra*) Instead, it denies what Plato held to be the fact in experience which justified his "metaphor," namely that craftsmen look to a unitary, intelli-

[410] This explanation refers not only to the supreme final cause but to all immobile movers (cf Carteron, *La Notion de Force*, p 781) It ought, therefore, to apply to the motionless movers of projectiles also (see note 409 *supra*), though these as corporeal and consequently continua would have to be excluded (see note 310 [page 391 *supra*] on *Physics* 258 A 18-22) At any rate, the metaphor is better suited to improper *efficient* causality than to a purely *final* cause (cf the admission of Mugnier, *La Théorie du Premier Moteur*, p 113). Aristotle uses the metaphor of contact quite differently to express the activity of νοῦς (see note 335 *supra*), for there the subject which "touches" the object, and not the object, is affected and "moved" (see note 329 *supra*).

gible idea apart from particulars as the model for their productions (cf *Cratylus* 389 A-B, *Republic* 596 B, *Laws* 965 B-C [see note 150 *supra*]), a denial which is considerably tempered, however, in Aristotle's own account of the artisan's procedure;[411] and, at the same time, it is an appeal to what Aristotle himself considers the conclusive instance contradictory, the natural generation of offspring by parent, a fact which requires explanation, however, and which is susceptible of an explanation in perfect accord with Plato's metaphor.[412] On the

[411] In *Physics* 194 B 26 = *Metaphysics* 1013 A 26-27 Aristotle himself calls the formal cause παράδειγμα. This designation, though seized upon by some as proof that the passage was written in his "Platonic period" (cf Ross, *Physics*, p. 512), simply expresses the rôle of essence in artificial production (cf Simplicius, *Phys*., p. 314, 17-23) as described in *De Part. Animal.* 639 B 14-19 and *Metaphysics* 1032 A 32-B 17. The artisan, having in his soul this form, e.g. health or house, which is the immaterial essence, proceeds by rational analysis of this nature to deduce the method of reproducing it in matter (cf. 1034 A 30-32, *Eth. Nic.* 1112 B 23-24, *Eth. Eud.* 1227 B 28-33, Le Blond, *Logique et Méthode chez Aristote*, pp. 334-337). This form, which is a single universal (see note 258 *supra*), is thus the ἀρχὴ τέχνης (cf. *Anal. Post.* 100 A 8), but as *actually* known it is identified with the knowing subject (see note 253 *supra*) and consequently with the *actual* τέχνη (see page 343 and note 251 *supra*), so that Aristotle can call the τέχνη itself the form of the artefact (*Metaphysics* 1032 B 13-14, 1034 A 23-24 [οἷον ἡ οἰκία ἐξ οἰκίας, ἡ ὑπὸ νοῦ· ἡ γὰρ τέχνη τὸ εἶδος cf. Ross *ad loc.*], 1070 B 33, 1075 B 10, *De Part. Animal.* 640 A 31-32, *De Gen. Animal.* 735 A 2-3). Moreover, since the single form, the art, and the mind of the artisan are thus in actuality identical, Aristotle can call the form in the soul itself the *efficient* cause of the process of artificial production (*Metaphysics* 1032 B 21-23) even though he has just distinguished in that process the stage of νόησις from that of ποίησις (1032 B 6-17). Here, then, the distinction of the form as the object of thought and the norm of action from the artisan as efficient cause disappears (cf. Le Blond, *op. cit.*, p. 339, n. 2), but even here Aristotle's own doctrine is inconsistent with his criticism of the ideas as models most explicitly put in *Eth. Nic.* 1097 A 11-13, for the form of health in the physician's soul is an immaterial essence and not the quality of a particular patient (see note 142 *supra*).

[412] For the formula ἄνθρωπος ἀνθρώπου γεννᾷ as an argument against the ideas see the references in notes 294 (*sub fin.*) and 297 *supra* and for the implication of this argument in *Metaphysics* 991 A 22-23 = 1079 B 26-27 cf. especially Alexander, *Metaph.*, pp. 101, 25-30 and 103, 12-31. The parent "generates," however, only in the sense that it emits the seed which becomes the new animal. According to Plato, this seed is itself alive, even the desire for sexual intercourse on the part of the parent is really the desire of the animate seed which then as a living being grows and is articulated in the womb by the agency of its own soul

other hand, Aristotle's own metaphor makes of the immobile mover an "object of love" never attained and by its nature unattainable and implies an appetency[413] which, however, unlike appetency in the proper sense, causes the celestial sphere to move not *toward* the object desired but continually in a circle, so that this perpetual circular motion is really an *imitation* on a lower plane of the prime mover's immobile activity just as

(*Timaeus* 91 B-D, cf 73 C) Consequently the productive agent which in natural generation should be expected to "look to the ideas as a model" is not, as Aristotle argues, the parent but the soul of the seed itself

[413] The prime mover moves as τὸ πρῶτον ὀρεκτόν (*Metaphysics* 1072 A 25-B 1; cf Theophrastus, *Metaph* 4 B 18-5 A 5), and an ὀρεκτόν, as such unmoved itself, sets in motion through the medium of the moved mover, ὄρεξις (cf *De Anima* 433 A 17-30, 433 B 10-21, *De Motu Animal.* 700 B 35-701 A 2, 703 A 4-5) In *De Generatione* 336 B 27-28 it is said that in all things *nature* always desires the better (for Aristotle's metaphorical use of "nature" see note 163 *supra* and cf. *Index Arist* 836 B 10 ff.), and according to *Physics* 192 A 16-25 matter *in virtue of its own nature* desires form Proclus demanded the source of this appetency (*In Timaeum* 82 A [I, p 267, 4-12, Diehl]); and Theophrastus objected (*Metaph* 5 A 28-B 7) that, since appetency implies soul (cf Aristotle, *De Anima* 414 B 2, 433 B 28 29, *De Motu Animal* 702 A 17-19), the things that move must be animate (cf *Eth Eud* 1218 A 24-28 [note 302 *supra*]) but, since soul is life for the things that have it and the source of their appetencies, their motion is an immediate consequence of their having soul (cf Aristotle, *De Anima* 415 B 9-28) Now, Aristotle did regard the celestial spheres as animate (see Appendix X [pages 596, 598, 601] and Appendix VIII [pages 540-541, 544-545] *infra*) In fact, he had to ascribe a kind of life even to the simple, inorganic bodies inasmuch as they have natural motion depending upon an innate ὁρμή (*Physics* 250 B 14-15, 192 B 13-23 [ἔμφυτος ὁρμὴ μεταβολῆς, cf *Anal Post.* 94 B 36-95 A 3, *Metaphysics* 1023 A 17-21], *Metaphysics* 1050 B 30), and he himself asserts the absence of any clear distinction between animate and inanimate nature (*De Part Animal* 681 A 12-15, cf Rodier, *Traité de l'Ame,* II, pp 158-60, Carteron, *La Notion de Force,* p 143; Le Blond, *Logique et Méthode chez Aristote,* pp 350-51 and 363) On the other hand, he seems to avoid this conclusion by declaring that the immanent ἀρχὴ κινήσεως of natural inanimate entities is only an ἀρχὴ τοῦ πάσχειν (*Physics* 255 B 30-256 A 3 [note 163 *supra*], cf Carteron, *op. cit.,* pp 45-7 and 75-6), but from this point of view the real ἀρχὴ τοῦ κινεῖν is not immanent even for "self-moving" animals (*Physics* 253 A 7-20 and 259 B 1-16). It has already been observed that, if the motion of the heavenly bodies is treated as the actuality of the fifth essence, the immobile mover is quite superfluous as the cause of that motion (*Metaphysics* 1050 B 20-28, see Appendix X [page 583] *infra*), cf the critical question of Theophrastus (*Metaph.* 6 A 5-12 and 10 A 9-21) *whether* rotation is of the essence of the heaven *or* is to be attributed to an appetency incidental or innate.

the cyclical change of the simple bodies is an *imitation* in the sublunar world of the perpetual rotation of the celestial spheres.[414] So his own account of the ultimate cause of all natural process is not only metaphorical but is at bottom the same kind of metaphor as that for which he criticizes Plato.

Even if we pass over this metaphor and consider appetency in its proper sense, we find Aristotle's own doctrine inconsistent with his criticism of Plato. The theory of self-moving soul, he contended, implies the absurdity that soul has local motion, for, if soul moves body by its own motion, this motion must be of the same kind as that which it causes or imparts (*De Anima* 406 A 30-B 5 [pages 391-392 and note 312, pages 402-404 and note 330 *supra*]). His own doctrine is that the locomotion of body is caused by the motion of appetency which is an incorporeal, psychical faculty (*De Anima* 433 A 30-31, 433 B 13-19; *De*

[414] *De Generatione* 336 B 27-337 A 7 With 337 A 1-7 cf *Metaphysics* 1050 B 28 30, for the connection of 336 B 27-A 1 with *De Caelo* 286 A 9-12 and 292 A 18 B 25 see Appendix X (pages 586-587) *infra*, and for the "mythical" form of the passage and its relation to the *Timaeus* see page 420 and note 352 *supra* 'The spheres" says Ross "cannot reproduce this (*scil.* the continuous unchanging activity of the moving principle) but they do the next best by performing the only perfectly continuous physical movement, viz movement in a circle" (*Metaphysics*, I, p. CXXVIII, cf *idem, Theophrastus, Metaphysics*, p. 47 on 5 B 12) So Theophrastus asks why things which are supposed to have an appetency for what is at rest pursue in their imitation of it not rest but motion (*Metaph.* 7 B 23-8 A 2 and 5 A 23-25), and similarly A Bremond· "quel rapport intelligible, si ce n'est symbolique, du tour circulaire à l'amour connaissant ou à la connaissance amoureuse?" (*Archives de Philosophie*, X, 2 [1933], p 108). Circular motion, as has already been observed, never reaches a τέλος and is therefore irreconcilable with Aristotle's general definition of motion (see Appendix X, pages 582-583 *infra*), for the same reason, while an appropriate symbol or physical likeness of continuous and unchanging mental activity (as Plato took it [see page 404 and note 331 and, for Aristotle's objections, note 332 *supra*]), it is most unsuitable to explanation as the result of ὄρεξις, since the object of ὄρεξις is always a τέλος in which a motion terminates or toward which it tends (cf. *De Anima* 433 A 15, *De Part. Animal* 641 B 23-25, *Metaphysics* 996 A 26-27; Le Blond, *Logique et Méthode chez Aristote*, p 390 and n 4) To be sure, the very activity of rotation might be considered the object of the celestial sphere's ὄρεξις, but then this rotation would itself be the τέλος of the sphere which would have no final cause or ὀρεκτόν beyond its own activity, and the separate immobile mover would be superfluous just as it must be if the motion of the heavenly bodies is made the actuality of the fifth essence (see note 413 *supra* and Appendix X [page 583] *infra* on *Metaphysics* 1050 B 20 28).

Motu Animal. 700 B 35-701 A 2, 703 A 4-5). According to the principle of his attack upon Plato, then, must also be locomotion, although, being incorporeal, appetency cannot have spatial motion at all (cf. *Physics* 234 B 10-20, 240 B 8-241 A 26 and see note 310 *supra*). If, however, he means that the spatial motion of body is caused by a "psychical motion" which is not itself spatial, he cannot argue that the self-moving soul must have the same kind of motion as that which it causes in body. Nor can the dilemma be avoided by calling appetency ἐνέργεια rather than motion,[415] for its "actuality" or "activity" must be something more than the actualization of the form of the object as in thought, sensation, or imagination; if the faculty of appetency in actuality were just this and were not in motion, it would itself be another unmoved mover and could not be that intermediate factor between the unmoved mover and the moved body which according to Aristotle it is (*De Anima* 433 B 13-19, *De Motu Animal.* 703 A 4-5). The doctrine of appetency betrays most clearly the difficulties which beset the attempt to analyze motion into the factors of matter and form (see page 413 *supra*); and Aristotle seems to recognize that animate motion at least cannot be accounted for by mobile matter and immobile form alone but requires in addition as its efficient source a positive *impulse* different from both. Nevertheless, he tries to reduce this impulse to his regular pattern: appetency, which by its motion moves the body, is itself moved by an unmoved mover, the object of desire as thought, perceived, or imagined.[416]

[415] Cf. *De Anima* 433 B 17-18 καὶ ἡ ὄρεξις κίνησίς τις ἡ ἐνέργεια, for the text of which cf. Rodier, *Traité de l'Ame*, II, p. 546 and Hicks, *Aristotle De Anima*, p. 562. The latter (*op. cit.*, p. 563) gives a résumé of the attempts of the ancient commentators to explain away the "motion" of appetency.

[416] Cf. especially *De Anima* 433 B 11-12, *De Motu Animal.* 701 A 33-36 and 702 A 17-19. This analysis leaves unexplained the very characteristic which caused Aristotle to distinguish appetency from the mental faculties, its motivity; cf. Werner, *Aristote et l'Idéalisme Platonicien*, pp. 215-16 and 224: "Mais le désir et la volonté ne produiraient aucun mouvement si, à ces éléments d'ordre affectif et intellectuel, qui représentent la conscience, ne venaient s'ajoindre un élément proprement moteur. Aristote méconnait cette vérité. Il confond l'élément moteur avec l'élément affectif. Il réduit la cause motrice à la conscience."

Since the object of desire is an intelligible or sensible form actualized in the soul, it is as identical with this actualized form that the soul is the unmoved mover and the final cause of the living body. The logical consequence is that the soul as final cause cannot be the form of the living body but is that toward which the living body moves,[417] and this actualized form must then exist apart from both its proper matter and the matter of the living being. To be sure, it may be urged that the mind itself in which the form is realized is its matter (cf. *De Anima* 430 A 10-15 and Robin, *Idées et Nombres*, pp. 61-2); but this "matter" is metaphorical and, moreover, implies the metaphor of participation. "The mind thinks itself by participation in the intelligible," Aristotle says (*Metaphysics* 1072 B 20); and to describe mind as the impassive and formless receptacle of forms he borrows the Platonic description of space, the formless receptacle of the likenesses of the ideas,[418] which he calls the participant (τὸ μεταληπτικόν, τὸ μεθεκτικόν) and interprets as the recipient of the ideas themselves (see pages 117-118 *supra*). Yet he might protest that this metaphor is not his last word on the subject, the soul, though called "receptive" of the forms, does not "participate" in them as in something existing apart from itself but is potentially all the forms, intelligible and sensible, and knows and perceives by being actualized as one or another of them under the influence of an agent which is already that actualized form (cf. *De Anima* 431 B 20-432 A 3, 431 A 1-5, 417 B 18-24, 417 A 14-21). So Aristotle applies to the problem of sensation and knowledge his general principle that what is actually comes to be from what is potentially by

[417] So the simple bodies in natural motion "moving to their own forms" do not have these forms until they reach the term of their motions where they attain their actuality (see pages 413-414 *supra*) Cf also Rodier, *Traité de l'Ame*, II, pp. 89, 123 (cf *Crit. Pres Phil*, p. 324, n 128), 546, Werner, *Aristote et l'Idéalisme Platonicien*, p 223, Carteron, *La Notion de Force*, pp 104-5 and pp 124-26

[418] *De Anima* 429 A 15-24 and *Timaeus* 50 B-51 A (see page 91 *supra*) The relation of the two passages seems to have been first pointed out by Teichmüller (*Studien zur Geschichte der Begriffe*, p 333 [note]) who also observed that Aristotle's use of Anaxagoras in this passage (429 A 18-20 [cf. *Crit. Pres. Phil.*, p 172, n 122]) depends upon this Platonic interpretation. In 429 A 24-25 Aristotle then uses his adaptation of Plato's description as a criticism of Plato's language in the *psychogonia* (see note 333 *supra*).

the agency of what already is actually (cf. *Metaphysics* 1049 B 24-27) It is this principle by which he believes that he has solved the problem to which "participation" is a meaningless answer: the unity of form and matter is produced by the efficient cause which itself being the form already actualized makes the proximate matter become actually what it already is potentially (*Metaphysics* 1045 B 7-23, 1075 B 34-37 [see note 297 and page 39 *supra*]).

Such an actualizing agent for sensation, which is potentially all the sensible forms, may seem to be satisfactorily provided by the external sensible objects (cf. *De Anima* 417 B 20-21, 431 A 4-5), but in the case of thought it is necessary to posit an internal efficient cause to actualize all the intelligible forms which mind is potentially. Consequently Aristotle has to assume that besides mind which can become all these forms there is also mind which can produce them (*De Anima* 430 A 10-25). This actualizing agent of thought, however, should according to his own principle be *actually* all the intelligible forms prior to their actualization in thought, so that these intelligible forms would, after all, have actual existence apart from matter of any kind. This logical consequence of his own doctrine Aristotle does not himself draw.[419] Instead, the efficient cause, which was at first declared to be analogous to τέχνη (430 A 12-14), is suddenly said to produce all things in the manner of a ἕξις like light, which actualizes all the potentially existing colors (430 A 15-17). This analogy, which appears to be an adaptation of Plato's (cf. *Republic* 507 D-509 A), involves as much difficulty as the other, however, for light according to Aristotle is the actuality of the transparent *qua* transparent which is so actualized by the agency of fire or the fifth essence (*De Anima*

[419] For a concise and sober interpretation of Aristotle's few and ambiguous remarks concerning the "efficient mind" cf Ross, *Metaphysics*, I, pp. cxliii-cxlviii, and for some of the difficulties for other parts of Aristotle's system implied in this doctrine cf. Shorey, *A J. P.*, XXII (1901), pp. 160-64 and A. Bremond, *Archives de Philosophie*, X, 2 (1933), pp. 79-81 For a summary of the more important among the multitude of interpretations cf H Kurfess, *Zur Geschichte der Erklarung der aristotelischen Lehre vom sog* ΝΟΥΣ ΠΟΙΗΤΙΚΟΣ *und* ΠΑΘΗΤΙΚΟΣ and E E. Spicer, *Aristotle's Conception of Soul*, pp. 103-12 Among later publications cf. especially De Corte, *La Doctrine de l'Intelligence*, pp. 52-63, who maintains the unity of mind in its two aspects

418 B 9-20, 419 A 11). The analogy strictly applied would make efficient mind the actuality of a *medium* between subject and object (cf Ross, *Metaphysics*, I, p. cxlv); but, even on the most general interpretation, if efficient mind is at all analogous to light, it would imply *another* efficient agent to produce by its influence or "presence"[420] *this* actuality. Such are some of the consequences involved in the attempt to explain thought as the actualization of forms which the mind already is potentially, an explanation which is in any case metaphorical, since here the "material" when actualized is not a complex of informed matter but, on the contrary, an entirely immaterial form

Even in the explanation of physical change and generation, however, the "meaningless metaphor" of participation is not successfully replaced by Aristotle's formula of efficient causality. This is especially apparent in the case of natural reproduction, the very phenomenon which he adduces as evidence of the superfluity and uselessness of the ideas (see pages 463-464 and note 412 *supra*). Although he cites as an example of efficient cause the male parent which, by reason of being the actualized form that the offspring is to be, can produce this form in the matter provided by the female (*Physics* 202 A 11-12; cf. *Metaphysics* 1034 A 4-5, 1070 B 30-34; *De Gen. Animal.* 729 A 9-11, 738 B 20-27), still the true efficient cause is that which by *contact* with the material actualizes the form which the latter has potentially (*Physics* 202 A 3-9; *De Gen. Animal.* 734 A 2-4, 740 B 18-24), and this is not the male parent itself but the sperm (cf. *Metaphysics* 1044 A 34-35; *De Gen. Animal.* 730 A 14-15, 766 B 12-14). According to Aristotle's own principle, then, the sperm must carry the form and so should be actually what the

[420] Aristotle says indifferently that the transparent becomes actually transparent (i. e. light) ὑπὸ πυρὸς ἢ τοιούτου (*De Anima* 418 B 11-13, 419 A 23-25) and that light is πυρὸς ἢ τοιούτου τινὸς παρουσία ἐν τῷ διαφανεῖ (418 B 13-17 and 19-20, *De Sensu* 439 A 19-21) This παρουσία is, of course, not corporeal presence (cf *De Anima* 418 B 17) but is an attempt to express the "transmitted influence" of the efficient cause The term was very probably suggested by Plato's usage (cf *Lysis* 217 C-E), but it is no "remnant of a Platonic period", on the contrary, it indicates the difficulty, as Carteron puts it, "de concevoir une action transitive entre substances" (*La Notion de Force*, p 72, n. 280; cf Rodier, *Traité de l'Ame*, II, pp 274-75).

catamenia are potentially;[421] but it obviously is not the actualized form, whether by "form" of the living being soul or specific form be meant (see Appendix V, pages 506-508 *infra*), and Aristotle himself finally says that it has the form only potentially (*De Gen. Animal.* 735 A 4-9, 736 B 8-12, 737 A 16-18; *Metaphysics* 1034 A 33-B 1). That being so, however, it lacks the very characteristic of actuality which was supposed to account for the unification of form and matter in the generation of a new individual; the immediate factors into which this generation is analyzed turn out to be potentialities, and, since no combination of potentialities can result in an actuality, the form which appears in the new individual must be something over and above these factors and not to be explained by their conjunction.[422] It does not diminish the difficulty to say that the

[421] Cf *Physics* 202 A 9-11 *εἶδος δὲ ἀεὶ οἴσεταί τι τὸ κινοῦν, ἤτοι τόδε ἢ τοιόνδε ἢ τοσόνδε, ὃ ἔσται ἀρχὴ καὶ αἴτιον τῆς κινήσεως ὅταν κινῇ.* Here the example is that of actual man producing a man from what is potentially man. In *De Gen. Animal* 765 B 10 15, however, the semen is described as "containing the principle of form" as the first moving cause, cf 737 A 32-34 *ταύτην (scil τὴν τῆς ψυχῆς ἀρχήν* = form [cf 738 B 26-27 and *Metaphysics* 1035 B 14 16]) *γὰρ τὸ τοῦ ἄρρενος ἐπιφέρει σπέρμα.* At 734 B 21-22, after stating the general formula that all natural and artificial products come to be from what is potentially such by the agency of what is actually, Aristotle says *τὸ μὲν οὖν σπέρμα τοιοῦτον*, one would consequently expect the sperm to be actually what the matter is potentially, especially since in 734 A 27-32 it has been concluded from this same formula that the heart, for example, cannot produce the liver because to do so it would have to have the form of the liver

In 741 B 5-7 it is said that the male *ἐμποιεῖ τὴν αἰσθητικὴν ψυχὴν ἢ δι' αὐτοῦ ἢ διὰ τῆς γονῆς.* The former alternative refers to those male insects which supposedly emit no sperm but are penetrated by the female in copulation (729 B 22-33, cf 721 A 13-17 and 723 B 19-24). Even here, however, it is not the male animal as such but the analogue of the sperm in the male animal which informs the material in the female (cf 729 B 25-28 and 31-32). In this passage Aristotle speaks loosely of the sperm or its analogue as if it were itself just the form (729 B 19-21 and cf Platt's note in the *Oxford Translation* of *De Gen Animal* on 724 B 6)

[422] Cf. Carteron, *La Notion de Force,* pp 90-91. "Le mieux que l'on puisse dire, c'est que l'âme étant en puissance dans l'oeuf et la semence, est éveillée quand l'embryon se forme " According to Aristotle's general formula, the contact of sperm should make the catamenia, which are potentially sperm (cf. *De Gen Animal* 728 A 26-30, 737 A 28-29, 774 A 1-2), become actually sperm but could not account for any further actualization Any *potentiality* of the sperm would have to be actualized itself before it could actualize the potentiality

sperm has within itself a "motion" set up by the male parent and that therefore the contact of sperm is equivalent to the contact of the actualized form (*De Gen. Animal.* 734 B 7-9). If this "motion" is just a mechanical impulse which, by releasing the first of a series of movements already organized in the catamenia, starts the consecutive actualization of the whole series in an automatic development of the parts of the embryo (734 B 9-16, cf. 741 B 7-9), there is no necessary relation between the form of the efficient cause and the form which appears in the new individual (cf. Carteron, *La Notion de Force*, pp. 92 and 191). If, on the other hand, it is analogous to the motion of the tools whereby the soul of the artisan causes the form which it knows—and so actually is (see note 411 *supra*)—to appear in the external matter (730 B 8-32, cf. 740 B 25-741 A 2), this motion of the sperm must represent the form actualized in the male parent and so, once more, must be that form either actually or potentially, unless it is a "potency of the form" in some unexplained sense of "force" produced by the form and able to reproduce it[428] Even if one does not

of the catamenia, and this actualization of the sperm would imply another agent which should already be actually what it actualizes in the sperm There is a partial recognition of this at *Metaphysics* 1049 A 14-17 where it is said that the sperm is not even potentially a man (cf. 1049 A 1-3) until it has been deposited and has undergone a change (!), even here, however, once deposited the sperm is spoken of as acquiring the necessary characteristics διὰ τῆς αὑτοῦ ἀρχῆς, though Aristotle does not and cannot say what "principle of its own" could so actualize the formative principle itself

[428] According to *De Gen Animal.* 730 B 19-22 and 27-32 the sperm is employed as an instrument by 'nature," which "nature" seems in each particular case to be the "generative soul" (740 B 29-741 A 2, cf. Carteron, *La Notion de Force*, p 89), although in *Metaphysics* 1034 A 33-34 the sperm is treated as the analogue of the artisan himself (cf. [Alexander], *Metaph*, p 500, 10-12). That sperm is an instrument and not matter is according to Michael Ephesius the reason why it is exempt from organic development and growth even though in *De Gen. Animal.* 737 A 20-22 it is said to be moved with the same motion which it sets up in the catamenia ([Philoponus], *De Gen Animal* pp 87, 29-88, 12), but it should be observed that this motion, the same as that in virtue of which the body increases, is in that passage ascribed to it not as an instrument but because it is a secretion, i. e formed matter (737 A 18-20, cf 725 A 11-27, 726 B 3-15) In the account of heredity the "motion" of sperm becomes *motions*, some actual and others potential, which are produced by the *forces* of all the characteristics of the male parent, the latent as well as the manifest,

inquire too curiously into the nature of this instrumental motion intermediate between the actualized form and the potential matter but assumes that the form does somehow generate it and by means of it can set up motions and changes in the matter, still the appearance of the new form remains unexplained, since

and which in turn produce all the parts and characteristics of the offspring (cf 767 B 35-768 A 2, 768 A 11-14, 768 B 4-7). One may disregard the many difficulties for Aristotle's general theory which are here involved (e g the implications of efficient motions of matter [cf 768 A 19-20 and 35-36], of *particular* forms, and of the independence of the more general characteristics from the more particular [cf 768 A 28-31], see note 238 *supra*), it is enough to observe that these motions of sperm must represent exactly the form of the male parent, that they constitute what Michael Ephesius calls the δύναμις in the sperm that actually has the immaterialized forms of all the parts which will be actualized in the matter (cf [Philoponus], *De Gen. Animal.* p. 73, 19-34). Such a δύναμις, however, is obviously not the actuality of the form and yet not the potentiality of form either, since the sperm, if it had the form potentially, could not actualize the matter and would not be different from it, unless "potentially" in the case of sperm signifies not a *possibility of receiving or becoming*, as it does in the case of the catamenia, but a *power of producing* (cf. [Philoponus], *De Gen Animal* p. 88, 15-20) It is δύναμις in this sense of "active power" that Aristotle so often attributes to the sperm (e.g. *De Gen Animal.* 727 B 14-16, 730 A 14 15, 736 A 24-27, 739 A 17) and that he sometimes glosses with κίνησις (e g 729 B 4-8) and sometimes replaces by it (e. g 738 B 11-15). Such "power" to actualize potential matter, however, belongs to an agent in virtue of the form which it has *actually*, and it is only by equivocation of δύναμις that Aristotle can pass from what the sperm is *potentially* to its supposed *power* to produce that thing Thus, upon first stating that the sperm is *potentially* (δυνάμει) what each part of the animal or the whole animal is actually, he suggests (*De Gen Animal* 726 B 15-24) that it may be so because it has in itself some *power* (δύναμις) which would be a generative principle of motion (ἀρχὴ κινήσεως γεννητική), every part of the body being what it is in virtue of soul or some other *power* (ἄλλη τις δύναμις), and the soul which sperm has δυνάμει later becomes explicitly ποιοῦσα δύναμις by mediation of the ambiguous phrase ἡ ψυχῆς δύναμις (cf. 740 B 29-37). On the other hand, when from the statement of the general principle of production one would expect Aristotle to conclude that the sperm must be actually what the catamenia are potentially (734 B 21-22, see note 421 *supra*), he really asserts only that the sperm has a certain principle of motion (734 B 22-24, cf 743 A 21-29) In this κίνησις of sperm are blended the equivocations of δύναμις and ἐντελέχεια—ἐνέργεια, the first passing imperceptibly from the meaning of potentiality to that of power and the second from the meaning of actuality to that of action, but Aristotle does not attempt to say, of course, what this power or action may be which is intermediate between the actualized form which produces it and the matter which it actualizes

form cannot be produced by the fashioning of matter, for according to Aristotle it is not the result of any process at all but supervenes instantaneously without generation and disappears without destruction.[424] It cannot be the result, then, even of change wrought in matter by the *direct* contact of the actualized form; and, if such instantaneous appearance is generation "accidental" to the real nature of the form, it does not differ at all from "participation," even though Aristotle denies that the form, while more real than any of its particularizations (*Metaphysics* 1029 A 5-7 and 27-32), has any separate existence except in the particularizations which are accidental to it.[425]

The charge that participation is futile is ultimately just the contention that nothing could explain how the ideas are the οὐσίαι of phenomena which did not make them immanent in the

[424] *Metaphysics* 1033 B 5 19 (*φανερὸν ἄρα ὅτι οὐδὲ τὸ εἶδος . . . οὐ γίγνεται οὐδ' ἔστιν αὐτοῦ γένεσις οὐδὲ τὸ τί ἦν εἶναι .* κτλ.), 1039 B 20-27 (*. . . τοῦ δὲ λόγου οὐκ ἔστιν οὕτως ὥστε φθείρεσθαι· οὐδὲ γὰρ γένεσις . ἀλλ' ἄνευ γενέσεως καὶ φθορᾶς εἰσὶ καὶ οὐκ εἰσίν· . . .* κτλ.), cf. 1034 B 7-16, 1042 A 26-31, 1043 B 14-18, 1044 B 21-29, 1070 A 15 17, see note 279 *supra* and cf. Mure, *Aristotle*, pp 214-15, Rivaud, *Le Problème du Devenir*, p 404, Rodier, *Traité de l'Ame*, II, p 179. (Cf for the doctrine that alteration is instantaneous [*Physics* 186 A 15-16, 253 B 23-26, *De Sensu* 446 B 28-447 A 6] *Crit. Pres. Phil*, pp 89-90; Boas, *A J P*, LVII [1936], pp 27-8.) In *De Gen. Animal.* 730 B 14 15, however, Aristotle says that at the agency of the artisan the form arises in the matter *διὰ τῆς κινήσεως*, and at 734 B 33-36 he goes so far as to say that the motion from the male parent, who is actually what the matter is potentially, *makes the formula* by which flesh is flesh

[425] See pages 370 372 *supra* and on this "accidental generation" (*Metaphysics* 1033 A 24 31 [notes 256 and 279 *supra*]) cf Baeumker, *Das Problem der Materie*, pp. 287-88. "eine solche accidentelle Entstehung der Form würde doch nur dann keine Entstehung der Form selbst sein, wenn diese Form nur äusserlich bald zu diesem, bald zu jenem Teile der Materie in Beziehung träte, in sich aber gleich der platonischen Idee als eine specifisch und numerisch identische verharrte" For the insufficiency of Aristotle's efficient cause as an explanation of the appearance of the new form cf. especially Carteron, *La Notion de Force*, pp 223-27. It is worth observing that as the cyclical change of the simple bodies is called an *imitation* of the perpetual rotation of the celestial spheres—which is itself really an imitation of the prime mover's immobile activity —(see pages 465-466 and note 414 *supra*), so natural generation is represented as a *participation* in the eternal and divine for which all living beings yearn and which is the final cause of all their natural activities (*De Anima* 415 A 26-B 7, cf. *De Gen. Animal.* 731 B 24-35, and for the Platonic origin of this notion of immortality see note 121 *supra*).

sensible particulars (*Metaphysics* 992 A 26-29, 991 A 12-14 = 1079 B 15-18, see pages 376-377 and note 123 *supra*) That participation does not produce such immanence Plato would certainly have been the first to admit, for *Timaeus* 52 A-C (see pages 209-210 *supra*) proves that participation or imitation was not intended to abolish or even to minimize the separation of phenomena and ideas;[426] but he would have denied that the causes of being for phenomena must as the οὐσίαι of these things be inseparable from them (*Metaphysics* 991 B 1-4 = 1079 B 35-1080 A 3 [page 379 *supra*], see notes 290 and 230 *supra*).

[426] Hoffmann (Anhang zu Zeller, *Phil Griech*, II, 1, pp 1092-93, *Platonismus und Mystik*, pp 12-13) and Faust (*Der Möglichkeitsgedanke*, I, p 72) rightly protest against the wide-spread supposition (e g Stenzel, *Studien*, pp 119-21) that Plato *intended* to "overcome" the separation Stenzel (*loc cit* and *op cit.*, pp. 104-5), like Brochard (*Études de Philosophie Ancienne et de Philosophie Moderne*, p 148), represents him as having thought that the doctrine of the intercommunion of ideas abolished the separation between the ideas and particulars, but this is refuted both by *Timaeus* 52 A-C and by the fact that there is a distinct difference between the interrelation of the ideas and the dependence of phenomena upon them (see page 317 *supra* and cf Cornford, *Plato's Theory of Knowledge*, p. 297) In reducing the latter to the former these interpreters commit an error just the reverse of Aristotle's when he assumes that the ideas have the same kind of relation to one another as the phenomena have to them (see pages 476-478 *infra*)

Aristotle's own criticism of participation, then, as well as all of his other evidence contradicts the isolated statement at *Metaphysics* 987 B 10-14 (pages 179-180 *supra*) representing Platonic "participation" as a mere verbal variant of an alleged Pythagorean "imitation" (see page 193, page 109, and note 65 *supra*), a statement which, as we have observed, is part of Aristotle's attempt to connect Platonism with Pythagoreanism and did not belong to his original account and criticism of the theory of ideas (see pages 189-198 *supra*) In that original account, the περὶ ἰδεῶν, as in the *Metaphysics* itself Aristotle in speaking of the Platonic theory made no distinction between "participation" and "imitation" (cf *frag* 189, p 152, 14-16 and 21 24 [Rose] = Alexander, *Metaph*, p 98, 11-12 and 16-19; *Metaphysics* 991 A 20-21 [note 103 *supra*]); and Plato obviously used the two as equivalent (see note 95 *supra* and on *Parmenides* 132 D-133 A see pages 295-298 *supra*) At *Metaphysics* 1092 A 1-2 Aristotle glosses μετέχειν with ὀρέγεσθαι (cf *Physics* 192 A 16-22), in the *Eudemian Ethics* (1217 B 5-10) κατὰ μετοχὴν καὶ ὁμοιότητα is a single phrase, the relation from the side of the idea being expressed by παρουσία, but most interesting of all is the schematization in the LF version of Alexander, *Metaph*, p 121, according to which participation is expressly a generic term of which imitation is one species: τριχῶς δὲ ἡ μετοχή· ἢ κατὰ ἔμφασιν, ὡς ἐπὶ τοῦ κατόπτρου, ἢ κατὰ διατύπωσιν, ὡς ἐπὶ τῆς σφραγῖδος, ἢ καθ' ὁμοίωσιν, ὡς ἐπὶ τῆς εἰκόνος

This is a canon of Aristotle's own doctrine of substance, which upon closer examination is seen to involve such restrictions as to render its apparent purport invalid (see pages 351-357 *supra*) and the superficial plausibility of which depends upon the ambiguity of οὐσία as Aristotle uses the term (see pages 364-371 *supra*). At any rate, to Plato immanence amounts to dependence upon external conditions, so that what is immanent could not itself be οὐσία and consequently could not be the source of being for that to the inherence in which it owes what being it has itself; to argue that what is not immanent in the participant cannot be the cause of its being would to him be tantamount to asserting that the cause of being for an image cannot be a separate original but must be a characteristic of the image itself (see pages 371-376 *supra*). Participation, whether or not it is an adequate explanation of the being of phenomena, at least satisfies the primary requisite of any such explanation, namely to represent phenomenal existence as derivative from being which is itself not reduced to the phenomenal level or in any way affected in its reality by being the cause of this derivative existence. To Aristotle's remark that the phenomena are not "from" (ἐκ) the ideas in any ordinary sense of the word (*Metaphysics* 991 A 19-20 = 1079 B 23-24 [page 377 and note 293 *supra*]) Plato could assent and reply that participation signifies that they are "from" them in the same way as according to Aristotle the world of nature is "from" his first principle, "depending from" it (*Metaphysics* 1072 B 10-14 and 1003 B 12-17 [ἤρτηται ἐκ], see note 271 *supra*) as from a "separate essence" (see pages 359-364 and note 269 *supra*)

In any case, Aristotle's own criticism of participation should have prevented him from treating the ideas as if they must be in space since they are participated in (see pages 117-123 *supra*) and as if they could not be principles of multiplicities because they were meant to be constitutive *elements* present in the participants.[427] This latter interpretation, moreover, mistaken in itself, he mistakenly applies to the relation among the ideas

[427] See page 222 *supra* on *Metaphysics* 1002 B 30-32 and 999 B 27-1000 A 4 and cf. Alexander, *Metaph.*, pp. 217, 27-218, 17 and Syrianus, *Metaph.*, p 40, 32-34. See also note 428 *infra*.

as well,[428] as if this must be identical with the relation of phenomena to them, whatever that may be. The same erroneous transference underlies his criticism that the metaphor of paradeigmatism would make the ideas models not only of phenomena but of other ideas also, so that the same thing would be both model and image (*Metaphysics* 991 A 29-B 1 = 1079 B 33-35). This is hardly compatible with the objection which immediately precedes it, namely that the same thing would have many models (*Metaphysics* 991 A 27-29 = 1079 B 31-33, for both see page 378 and note 294 *supra*), since here the more general and more specific ideas are treated as if they had the same relation to the particular and none at all to one

[428] The difficulties which Aristotle raises in *Metaphysics* 1086 B 20-32 (see note 247 *supra*) he means to apply both to the ideas as *elements* of phenomena and to the principles which he considers *elements* of the ideas. That is clear from 1087 A 4-7, concerning which Robin (though, following Bonitz and Christ, he mistakenly excises καὶ ἰδέας in 1087 A 6) rightly says "Aristote se propose d'exclure, d'un façon générale, l'hypothèse des Universaux séparés et individualisés, aussi bien en ce qui concerne les principes, à l'égard des Idées, qu'en ce qui concerne les Idées à l'égard des choses sensibles" (*Idées et Nombres*, n 480 [p 532]). Referring to the aforementioned difficulties, the sentence in question says that they all follow logically "when they make the ideas out of elements and apart from the substances which have the same form (i e particulars of a single species, substances in Aristotle's sense, of which the principles are the immanent forms or essences [see page 347 and note 285 *supra*]) they claim that the ideas are a single separate thing" (cf. Ross, *Metaphysics*, II, p. 465 on 1087 A 5-6) That is, the particulars of which the ideas are *elements* can be just so many as are the ideas, and the ideas in turn can be just so many as are their constitutive *elements*. The principles or elements of the ideas which Aristotle here has in mind are not, as is frequently asserted, the principles of idea-numbers, "the one" and "the indefinite dyad" (e. g [Alexander], *Metaph.*, p 787, 28-30; Ross, *Metaphysics*, II, p. 463), but simply the "generic" ideas, such as the idea of animal (cf. *Metaphysics* 1003 A 5-17), though the ideas of one and of being would, of course, be among these (cf 999 B 24-26). So in 1039 A 33-B 2 the idea of animal is treated as if it were a constituent element present in the separate ideas of specific animals, e. g man and horse, and the assertion of 1039 B 16-17 assumes that the specific idea is a constituent element of the sensible particular (see page 43 and note 122 *supra*, and for the legitimate use of this difficulty against Eudoxus [Alexander, *Metaph.*, p. 98, 3-4] and its exposure by Plato himself in the *Parmenides* [131 B 1-2] see Appendix VII, pages 531 and 536 *infra*). At 1040 A 22-23 Aristotle insists that the specific ideas are composites of simpler ideas and at 1092 A 6-7 charges the Platonists with making every principle an element.

another The subsequent criticism (i c 991 A 29-B 1) neglects Plato's distinction between the intercommunion of ideas and the relation to them of phenomena as participants or images (see pages 46-47 and 316-318 *supra*); but this objection disregards altogether the doctrine of intercommunion and with it the distinction of implication, compatibility, and incompatibility in this interrelation of ideas (see pages 90-91 and 374-375 *supra* on *Phaedo* 103 C-105 B [cf. Robin, *Platon*, pp. 109 and 274]; cf. *Sophist* 253 D). The consideration of these arguments of Aristotle, however, leads properly beyond his interpretation and criticism of the relation between the ideas and phenomena to his analysis of the ideas themselves and his account of the ultimate principles of the Platonists

APPENDIX I

Note 79 on Page 123

The exposition in the text is sufficient refutation of the view of J. M. Watson (*Aristotle's Criticisms of Plato*, pp. 17-18) that *Physics* 209 B 33 ff. "expressly distinguishes the 'space' of the *Timaeus* from the later material principle, viz. 'the Great and the Small'" and that the "tentative tone" of *Physics* 207 A 29 ff. shows that Aristotle did not believe in the identity of the unlimited in sensibles and in ideas; of *Physics* 203 A 9-10 (for Plato τὸ ἄπειρον exists both in sensibles and in ideas) Watson says merely that "there is no reason to conclude that this ἄπειρον is for both numerically the same," while he tries to explain away the clear statement of this identity in *Metaphysics* 988 A 10-14 by saying that "were the material cause identical for both Idea and phenomenon, this passage would mean that the Ideas which determine the Great-and-Small are yet themselves partly the result of that Great-and-Small, a contradiction which there is as little reason for attributing to Aristotle as to Plato." This may be a reason to suspect the accuracy of Aristotle's report, it is, however, no reason for denying that he explicitly attributes this "contradiction" to Plato. Watson goes on to argue (pp. 19 f.) that Aristotle in reporting Plato's theory distinguishes species of "the great and the small" (*Metaphysics* 1085 A 9-12) and so can use the generic name either for the indeterminate dyad (= τὸ πολὺ καὶ τὸ ὀλίγον, *Metaphysics* 1088 A 19) which is the matter of both ideal and mathematical numbers or for the specific "great and small," the material element of geometrical magnitudes but that he never uses "the indeterminate dyad" to refer to both. The matter of phenomena (χώρα), however, is not a third species (here Watson follows Baeumker, *Problem der Materie*, pp. 196 ff.) but was subsumed "under the more comprehensive category of τὸ ἄπειρον or, as he said in his lectures, 'the Great and the Small'." Watson, therefore, admits that Aristotle considers the Platonic matter of phenomena and

the material element of geometrical magnitudes to be identical. But against a distinction between the material element of magnitudes and that of numbers *Metaphysics* 1001 B 19-25 is conclusive; Aristotle there contends that his opponents cannot explain how or why at one time number, at another magnitude results from the one and the not-one since the not-one is ἀνισότης καὶ ἡ αὐτὴ φύσις. That this refers to Plato is shown by a comparison of the following passages which further substantiate the identity of the material principle:—1081 A 24-25 (ὥσπερ ὁ πρῶτος εἰπὼν ⟨τὸν ἀριθμὸν εἶναι⟩ ἐξ ἀνίσων [note that both mathematical and ideal numbers are under consideration, 1081 A 17-21 and cf. 1086 A 11-13, 1090 B 32-36], n. b. ἐξ ἀνίσων here is the same as ἐκ τοῦ μεγάλου καὶ μικροῦ ἰσασθέντων in 1083 B 23-25, 30-32), 1087 B 4-6 (τὸ ἄνισον = ὕλη), 7-11 (these generate number ἐκ τῆς τοῦ ἀνίσου δυάδος τοῦ μεγάλου καὶ μικροῦ and he who says that the principles are the unequal and the one and that the unequal is a dyad consisting of great and small ὡς ἓν ὄντα τὸ ἄνισον καὶ τὸ μέγα καὶ τὸ μικρὸν λέγει καὶ οὐ διορίζει ὅτι λόγῳ ἀριθμῷ δ' οὔ), 1092 B 1-2 (numbers derived from the unequal and the one), 1075 A 32-33 (τὸ ἄνισον = ὕλη in the sense of Aristotle's substrate of phenomena and the "contraries" of the Presocratics), 1091 A 24-25 (some produce even number first ἐξ ἀνίσων . . . τοῦ μεγάλου καὶ μικροῦ ἰσασθέντων); then in 1091 B 30-32 after certain difficulties of the theory of ideas are mentioned the further absurdity is noted that τὸ ἐναντίον στοιχεῖον (i. e. matter), τὸ ἄνισον καὶ μέγα καὶ μικρόν, is identified with evil (cf. 988 A 14-15 and note 62 *supra*). So Aristotle plainly asserts that for Plato the material substrate of ideas (or ideal numbers), mathematical numbers, magnitudes, and phenomena is identical and that τὸ ἄνισον, "the unequal dyad," "the dyad of the great and small," and "the great and the small" are all merely different names for this single concept. The variation of ἄνισα and ἄνισον in the above passages is parallel to the discrepancy between Aristotle's statement that "the great and small" was for Plato a unit and his frequent treatment of it as a pair (cf. Ross, *Metaphysics*, I, p. lxii; II, pp 470-471 on 1087 B 12). There are indications that some Platonists (probably Xenocrates, cf pages 87-88 *supra*), in order to avoid the ob-

jections brought against the term "the unequal," urged that Plato really meant by it a couple (i.e "the great" *and* "the small") and themselves made exclusive use of the term "dyad" or "indefinite dyad" (cf. 1088 B 28-35, 1056 A 8-11 [cf. note 60 *supra*], 1089 A 35-B 2 [the indefinite dyad and "the great and the small" are two different terms but their presumptive function is the same and, in Aristotle's eyes, so are their shortcomings; moreover, his objection that neither can explain the multiplicity of qualities and magnitudes without making these latter *numbers* shows that he considers either to have been the *only* material principle adopted by its proponents]), the terminology of these Platonists and their interpretation of Plato are probably responsible for Aristotle's treatment of the principle as a compound of two concepts (cf. Ross, *op. cit.*, I, p. lxi) Since, then, Aristotle considered the "indefinite dyad" and the "unequal" or "great and small" to differ only in name and since he is concerned with refuting what he holds to be the identical tendencies of Plato and the younger Academicians at once, he can at times in reference to Plato's proper doctrines use the term "indefinite dyad" by which certain of Plato's pupils referred to his material principle (1083 B 35-36 [cf. 23-25, the objections are supposed to be cogent against Xenocrates as well as Plato], 1088 A 15-17, 1091 A 3-5 [cf. 1090 B 32-1091 A 3]; it is noteworthy that all these passages occur in Books M and N where Aristotle is concerned more with the theories of Speusippus and Xenocrates than with that of Plato, cf. Jaeger, *Aristoteles*, pp. 182, 196-199, and von Ivánka, *Scholastik*, IX [1934], pp. 532-533).

Aristotle does indeed talk of species of "the great and the small," but his statements show that this was a development different from Plato's own doctrine. In *Metaphysics* 1085 A 9-12 he says that some produce lines from "long and short," planes from "broad and narrow," solids from "deep and shallow," and he adds that these are species of "the great and the small"; the same account occurs in 992 A 10-13 where "long and short" is called "a particular great and small" (Alexander, *Metaph.*, p. 117, 23-24, says that Aristotle spoke of this doctrine in the *De Philosophia*; Pseudo-Alexander,

Metaph., p 777, 19-20, and Syrianus, *Metaph.*, p. 154, 12-13, in saying that it was Plato's doctrine that was recounted in the *De Philosophia*, refer not to this but to the theory that the numbers 2, 3, and 4 were the *formal* elements of line, plane, and solid [cf note 77 *supra*]), but—while Plato himself may have spoken of these three "pairs" as dimensional aspects of a single spatial indefiniteness—992 A 16-18 shows that the theory to which Aristotle refers made the material principle of numbers τὸ πολὺ καὶ ὀλίγον and 1087 B 12-21 says unequivocally that those who adopted this as the principle for number were other than those who used for it "the great and the small" and that the innovation was due to the feeling that the latter was more proper to magnitude (he also mentions as different those who use the more universal "excess and exceeded" [17-18, 22-23], those who use τὸ ἕτερον καὶ τὸ ἄλλο [26], and those who use πλῆθος [27; the last is Speusippus, cf note 60 *supra*; the other two are unidentified but may be eclectics who combined certain tendencies of Platonism and Pythagoreanism, cf. Robin, *Idées et Nombres*, pp 657-660]). In 1089 B 9-15 he criticizes the same doctrine for failing to show how there are πολλὰ ἄνισα παρὰ τὸ ἄνισον and implies that πολὺ—ὀλίγον, the principle of numbers, is one subdivision of the unequal and μέγα—μικρόν is another, this latter being subdivided into the three pairs that produce lines, planes, and solids, while still other species of relation are also assumed Since his objection to the lack of connection among these pairs (1085 A 16-19, cf. 992 A 13-19) does not preclude his admission that they are *somehow* related to the entities supposedly derived from them and since the mistaken relationship assumed is of the same kind as that in the case of Plato's single material principle, he can refer to these pairs in criticizing those who posit the unequal as a unit but make it a dyad indefinite of great and small (*i.e.* Plato); these, he says, are characteristics and accidents rather than substrates of numbers and magnitudes, πολὺ καὶ ὀλίγον of number and μέγα καὶ μικρόν of magnitude, just like even and odd, smooth and rough, straight and curved (1088 A 15-21, cf. 1085 A 20-23 where this objection is made to the theory of the other sect). This attributes to Plato the substrate

πολὺ—ὀλίγον no more than it does even and odd Similarly 1088 B 4-13, where these pairs are mentioned, is a critique aimed at the general tendencies of all the Platonistic theories of elements·—elements are not predicated of those things of which they are elements, but πολύ and ὀλίγον are predicable, both together and separately, of number, μακρόν and βραχύ of line, πλατύ and στενόν of plane; and, further, if some number is absolutely ὀλίγον (as Aristotle believes 2 to be), then there must be a number which is absolutely πολύ, in which case number cannot consist of ὀλίγον καὶ πολύ *Metaphysics* 1090 B 32-1091 A 2 seems troublesome because of a corrupt text; it refers to those who differentiate ideal and mathematical number (a peculiarity of Plato, according to Aristotle, cf 987 B 14-18, 1086 A 11-13) and then accuses them of failing to say how or from what mathematical number originates. If from "the great and small," Aristotle objects, it will be the same as ideal number. The next words are ἐξ ἄλλου δέ τινος μικροῦ καὶ μεγάλου· τὰ γὰρ μεγέθη ποιεῖ. The emendations and interpretations (cf. Bonitz, *Metaphysica*, p 582; Ross, *Metaphysics*, II, p. 482; Robin, *Idées et Nombres*, note 221 [2] [p 216]) which make this mean that Plato derived magnitude from "some other great and small" cannot be reconciled with the flat statement of 1001 B 21-24: διὰ τί καὶ πῶς ὁτὲ μὲν ἀριθμὸς ὁτὲ δὲ μέγεθος ἔσται τὸ γενόμενον, εἴπερ τὸ μὴ ἓν ἡ ἀνισότης καὶ ἡ αὐτὴ φύσις ἦν. I should, therefore, read ἐξ ἄλλου δὲ τίνος μικροῦ καὶ μεγάλου τὰ μεγέθη ποιεῖ; ("and from what other great and small does he produce magnitudes?"). Thus the objection is the same as that of 1001 B 19-25 (cf. 991 B 27-30), extended now to the mathematical numbers, and the next sentence supports this interpretation ("But if he should say that it is some other [great and small] he would say that the elements are multiple"); had Plato already posited *two* material principles, it would be absurd to restrict this objection to the case of his positing a *third*.

So Aristotle assigns to Plato a single material principle, by whatever name it be called, and distinguishes a Platonistic theory which in respect of its multiplicity of material principles and Aristotle's objection to them is similar to the description

and the criticism of the system of Speusippus (1028 B 21-24, 1075 B 37-1076 A 4, 1085 A 32-34 and B 1-4, 1090 B 13-20; cf 1085 A 15-19 [992 A 10-19], 1089 B 10-15), though the latter differs from it by making πλῆθος, not πολὺ καὶ ὀλίγον, the material of numbers (1087 B 6-8, 27 [cf 1091 B 30-35 and 1072 B 30-34]) and by positing for each of the other classes of existing things a material substrate different from this but *analogous* to it (1085 A 31-34). On the other hand, *Metaphysics* 1090 B 20-32 testifies that Xenocrates (cf. Ross, *Metaphysics*, II, p. 481) used the same material principle for the ideas (which he identified with numbers) and magnitudes, explaining the difference by different formal elements: magnitude, Aristotle says, he constructs of *the matter* and number, lines from 2, planes from 3, solids from 4, etc [Alexander], *Metaph.*, p. 816, 20-25, insists that this matter is other than that of the ideal numbers; but his commentary on 1028 B 24-27 (*ibid.*, p. 463, 2-8) as strenuously denies this (cf. note 77 *supra*); and Aristotle's unmodified phrase ἐκ τῆς ὕλης implies a single substrate, while his statement that the objection of making nature episodic does not touch this theory as it does that of Speusippus means that he regards its material principle as unique, for it is the multiplicity of this principle in the theory of Speusippus that causes its episodic character (cf. 1090 B 16-20 with 1085 B 1-4). Nor could Aristotle object that these magnitudes do not differ from the ideas (1090 B 24-25) unless he supposed their matter to be the same as that of the ideas, just as he argues (1090 B 36-37) that, if Plato's mathematical number derives from "the great and small," it is the same as his ideal number. Although Aristotle does not directly discuss Xenocrates' material of phenomena any more than he does that of Speusippus, the former seems to have paid more attention than the latter to the physical world (cf. Theophrastus, *Metaphysics* 6 B 6-9; Aristotle, *Metaphysics* 1028 B 24-27); elsewhere we read that he called matter ἀέναον (Stobaeus, *Eclog.* I, 10, 12 [*Dox. Graec.*, p. 288 b 15]; Theodoretus, IV, 2), a word that appears in the Pythagorean description of the τετρακτύς as πηγὴ ἀενάου φύσεως ῥιζώματα ἔχουσα (Hippolytus, *Refut.* I, 2, 8; Aëtius, I, 3, 8 [*Dox. Graec.*, p. 282],

Sextus, *Adv. Math.* VII, 94). Although there the word apparently means "everlasting," Plato had used it in the sense of "ever-flowing" to designate material phenomena as contrasted with soul (*Laws* 966 D-E, cf England *ad loc.*). The passage of Stobaeus implies that Xenocrates gave the word the connotation of plurality (i. e. ἀ-privative + ἕν); and a comparison of *Metaphysics* 1090 B 21-24 with Sextus' account (*Adv. Math.* VII, 99-100) of the origin of immaterial *and* material existence from the tetractys and of Aëtius' connection of the tetractys with νοῦς, ἐπιστήμη, δόξα, and αἴσθησις (*Dox. Graec.*, pp. 282-3) with Aristotle's statement in *De Anima* 404 B 21-30 indicates that for Xenocrates ἀόριστος was but another descriptive adjective for the indefinite dyad in which he combined Pythagorean and Platonic terminology. In that case his ultimate material principle of phenomena was identical with that of the idea-numbers and magnitudes Somatic matter he apparently derived from this by the action of different formal principles in such a way as to produce the atomic bodies of the five elements (Aëtius, I, 13, 3; I, 17, 3; Heinze, *Xenokrates, frag.* 53; [Aristotle], *De Lin. Insec.* 968 A 14-18) which were classified as πυκνόν and μανόν and as such combined to form the various parts of the cosmos (Heinze, *Xenokrates, frag.* 56).

Attempts such as that of Watson to make Aristotle attribute to Plato more than one "material principle" are refuted by the very texts which they invoke But the "contradiction" which Watson finds in the notion of a single matter for ideas and phenomena is a real difficulty. Zeller saw that Aristotle assigns the same "matter" to both; his solution was that Aristotle, in identifying the multiplicity in the ideas with the material unlimited so as to make "the great and small" the matter of both ideas and phenomena, mistook Plato's meaning (*Phil. Griech.*, II, 1, pp. 750-760). Robin refuses to believe that Aristotle could have been mistaken in this regard (*Idées et Nombres*, n. 448, III [p. 501]) and says that the indeterminate matter of sensibles "ne diffère pas de la matière des réalités intelligibles" (*op. cit.*, pp. 467-8); but, despite his protestations, he too finally assumes for Plato three distinct kinds of χώρα for intelligibles, mathematicals, and sensibles and

says " l'Espace qui est dans le Monde idéal n'a rien de commun avec l'étendue visible " (*op. cit.*, pp. 474-8). How " visible extension " comes into the theory he does not say; certainly it is not the χώρα of the *Timaeus* which is ἀνόρατον. But apart from other objections, Robin's assumption requires that he admit what he formally rejects: that Aristotle completely misunderstood Plato's theory of the substrate; for example, how is Robin's notion (*op. cit.*, p. 471) that for Plato κενόν was " the idea of interval " to be reconciled with Aristotle's statement that those who make τόπος matter say in fact that κενόν is τὴν τοῦ σώματος ὕλην (*Physics* 214 A 13-14)? Robin believes (*op. cit.*, n 410) that *Metaphysics* 1092 A 17-21 supports his assumption of a space in mathematicals apart from that in intelligibles and sensibles. This passage, as he admits, is concerned with Speusippus as are the lines immediately preceding and following it; even if it be out of place (cf. Bonitz, *Metaphysica*, p. 589), it cannot refer to Plato who made space eternal (*Timaeus* 52 D) and who is, because of his definition of τόπος, set apart from all others by Aristotle (*Physics* 209 B 16-17). Now in this passage Aristotle objects that it is absurd to make τόπος simultaneous with mathematical solids (for the text cf. Bonitz, *loc. cit.*) and to say that they have to be somewhere but not to say what the place is Aristotle, at any rate, has no notion that this τόπος is meant to be of a different kind from the τόπος of sensibles, as is shown by his argument that individual things have a proper place and so are separate in position but mathematicals are nowhere. The theory here criticized was apparently meant to indicate that the determination of position in space requires three dimensions. Certainly, had Speusippus been thinking of τόπος as a *constituent* of mathematicals (as Robin appears to believe) he would have had to make it coexistent with lines and planes as well as solids. As for the four kinds of space mentioned by Syrianus (*Metaph.*, p. 186, 23-25), which Robin considers to be equivalent to his own three, they cannot be traced to any Platonist; Syrianus himself indicates clearly enough that their origin is Aristotle's own doctrine (*ibid.*, 25-26; cf. Shorey, *De Platonis Idearum Doctrina*, pp. 37-9).

As Robin explicitly accepts Aristotle's exposition and then implicitly rejects it, so Ross gives the impression of the same inconsistency. He once subscribes to Aristotle's statement with the words (*Metaphysics*, I, p. lxix), "in sensible things the great and small is used twice over, once with the One to produce the Ideas, once with the Ideas to produce sensible things"; elsewhere (*ibid.*, p. 169) he calls the material element in sensibles "akin to the material element in Ideas"; then (*ibid.*, p. 170) he accepts Zeller's solution although he is not sure whether "such distinctions [were] made by Plato or not", and later he says that Plato "generated the ideal magnitudes from the One and from the various species of the 'great and small'" (*Theophrastus, Metaphysics*, p. 54). More recently (*Physics*, p. 541) he says: "The Ideas contained . . . as material principle the great and small (or ἄπειρον); sensible realities contained . . . as material principle a different ἄπειρον (spatial extension)"; but with regard to the substitution in the "unwritten doctrines" of the "great and small" for the χώρα of the *Timaeus* he writes (*Physics*, p 566): "'The great and small' was a more suitable name than 'space' to use of that which unites with the One to make the Forms as well as with the Forms to make sensible things." Zeller, Robin, and Ross, then, while recognizing that Aristotle attributes to Plato but one material principle, all more or less explicitly reject Aristotle's account as incorrect; their reason, whether expressed or not, is Watson's "contradiction" (cf. Zeller, *Platonische Studien*, pp. 292-5, Susemihl, *Die Genetische Entwickelung der Platonischen Philosophie*, II, pp. 550-557).

APPENDIX II

Note 116 on Page 196

The explanation of Plato's separation of universals as due to his belief that the shifting phenomena could not be the objects of definition (987 B 6-7, 1078 B 15-17) corresponds to a fragment of the περὶ ἰδεῶν (*frag* 186, Rose). On 990 B 11 Alexander (*Metaph.*, p 79, 4) refers to the first book of the περὶ ἰδεῶν where Aristotle spoke of the arguments from the sciences which were used to establish the existence of ideas, while the "third man" argument referred to in 990 B 17 was, according to Alexander (*Metaph.*, p. 85, 11-12), used by Aristotle in the same treatise (ἐν τῷ τετάρτῳ of the MSS is wrong [cf. Syrianus, *Metaph.*, pp. 121, 1 and 195, 14]; Rose emends to πρώτῳ. See also Appendix IV, ¶ 2). The arguments against Eudoxus, which Aristotle does not give but of which he says ῥᾴδιον γὰρ συναγαγεῖν πολλὰ καὶ ἀδύνατα (991 A 18), Alexander (*Metaph.*, p. 98, 21-22) says were given in the second book of the περὶ ἰδεῶν. The section on the reduction of substances to the principles which begins at 992 A 10, however, Alexander (*Metaph.*, p. 117, 23-24) refers to the περὶ φιλοσοφίας, in the second book of which we know that Aristotle made some sort of attack on the number aspect of the theory of ideas (Syrianus, *Metaph.*, pp. 159, 35-160, 3 = *frag.* 9, Rose). On 990 B 17-22 Alexander (*Metaph.*, p 85, 17-18) refers to the περὶ τἀγαθοῦ (see pages 300-301 and note 199 *supra*) as he does also in commenting upon 987 B 33 (*Metaph.*, p. 56, 35). The manner of the references in A, chap. 9 to arguments for and against Academic doctrines (e. g. 990 B 11-14, 991 A 18-19) gives the impression, as Jaeger says (*Aristoteles*, p. 176), that this was not the first expression which Aristotle had given to his objections, and from the references of Alexander given above it would seem that A, chap. 9 must be a list compiled by Aristotle from various parts of his earlier writings. Jaeger, however, thinks that *Metaphysics* A must have preceded Aristotle's published criticisms of the theory of ideas; the use of the first person plural to refer to those who held the theory (990 B 9, 11, 16, 23; 991

B 7, 992 A 11, 25, 27, 28) seems to Jaeger to show that A was written while Aristotle still counted himself a Platonist and that it was read before a Platonic circle, the group at Assos, just after Plato's death. It is unthinkable, he says, that Aristotle should have published the critique in the περὶ φιλοσοφίας before this esoteric discussion had taken place (cf. Jaeger, *Aristoteles*, pp 129, 176-179, 311) So far as this argument bears upon our analysis of chaps 6 and 9 of A, Jaeger's contentions would still admit the possibility that Aristotle had composed in writing (though not for publication) outlines of his objections to the theory of ideas before the year 347 and that these writings were used in the composition of the *Metaphysics*. Apart from this, however, Jaeger's conclusions are themselves untenable He admits that *Metaphysics* A presupposes the first two books of the *Physics* (*Aristoteles*, p 311, cf. *Metaphysics* 983 A 33-B 1, 988 A 21-22). The dialogue περὶ φιλοσοφίας, however, is cited in *Physics* B, 194 A 36 where the citation cannot be a later addition (cf. H von Arnim, *Wiener Studien*, XLVI [1927-28], pp. 6-8); therefore a published attack on the theory of ideas did precede *Metaphysics* A Moreover, H Karpp has argued with great force that the περὶ ἰδεῶν is earlier than *Metaphysics* A ("Die Schrift des Aristoteles περὶ ἰδεῶν," *Hermes*, LXVIII [1933], pp. 384-391); and R. Philippson has gone so far as to contend (though not convincingly, I think) that the περὶ ἰδεῶν preceded even Plato's *Parmenides* and *Sophist* ("Il περὶ ἰδεῶν di Aristotele," *Riv. di Filologia*, LXIV [1936], pp 113-125) Whatever the true chronological arrangement of these writings may be, however, Jaeger's reason for believing that no published attack on the ideas could have preceded *Metaphysics* A is insufficient That reason is that Aristotle in Book A uses the first person plural "wo immer von der Ideenlehre die Rede ist" (*Aristoteles*, p. 176, n 2). So, to be sure, he ought to have done if he still considered himself to be a Platonist at this time and if Book A is "eine in grossem Zuge entworfene Improvisation" of which the unity is inviolable (*Aristoteles*, pp. 178-179); but the evidence does not support Jaeger's statement. In chap 6 there is no suggestion that Aristotle is a Platonist and the exponents of the derivation of the idea-numbers from the dyad are referred to in the *third* person plural (988 A 2· οἱ μὲν

. . . ποιοῦσιν). In chap. 7 also the *third* person plural only is used of those who assume ideas (988 A 35-B 6: οἱ τὰ εἴδη τιθέντες λέγουσιν . . . ὑπολαμβάνουσιν . . . φασιν . . . παρέχονται). Even in chap 9 itself the first person plural is not consistently used in referring to Platonists; the *third* person plural is used in the opening objection (990 A 34-B 8); the first person plural is then used in 990 B 8-17 and again occurs at 990 B 23 but is not again found until 991 B 7. In 990 B 18 the text is doubtful, βουλόμεθα οἱ λέγοντες εἴδη being the reading of Π, βούλονται οἱ λέγοντες εἴδη of the Laurentianus; Alexander had the latter reading, Asclepius the former. Ross reads βουλόμεθα, saying that βούλονται οἱ λέγοντες εἴδη is "doubtless a gloss introduced from Book M and E has illogically combined οἱ λέγοντες εἴδη with βουλόμεθα" Asclepius, however, read οἱ λέγοντες εἴδη, even though he had βουλόμεθα (*Metaph.*, p. 78, 31), so that all the authority in both traditions supports the authenticity of this phrase; and it is surely far more likely that βούλονται, preceded and followed by verbs in the first person plural, should have been changed to βουλόμεθα to agree with them than that βουλόμεθα should have been changed to βούλονται on the basis of M while the first person plural verbs in the environing sentences were left untouched although their analogues in M are in the third person. Whichever form be read here, however, the statement that supports this sentence refers, as has been said, to certain adherents of the ideas in the *third* person plural (990 B 19-22: . . . ὅσα τινὲς ἀκολουθήσαντες ταῖς περὶ τῶν ἰδεῶν δόξαις ἠναντιώθησαν ταῖς ἀρχαῖς) In the section from 991 B 9 to 993 A 10 the first person plural occurs in 992 A 11 and 992 A 24-29; but in this section also various Academic doctrines are referred to with a form of the third person (991 B 29· πάντα τὰ μεταξὺ λεγόμενα ὑπό τινων . . , 992 A 32-33 γέγονε τὰ μαθήματα ταῖς νῦν ἡ φιλοσοφία, φασκόντων κτλ., 992 B 29. εἴ τις τῶν πάντων ἐστὶν ἐπιστήμη, ὥς τινές φασιν, . .). Jaeger's explanation of the first person plural in A consequently cannot stand; Aristotle does *not* use the first person whenever he refers to Platonists or to those who assume the ideas. Nowhere in A except in chap. 9 does he use this form and not even there does he use it consistently. Such a variation requires an account the opposite of Jaeger's. Aristotle did *not* consider himself a Platonist when he wrote *Metaphysics* A;

but chap. 9 is a list of arguments compiled by him from his previous writings in some of which the Platonic arguments were presented in the first person either because the writings were dialogues or because in them the critique was written from the point of view of a member—though possibly a dissenting member—of the Academy, and the arguments were summarized here in the words used in the original writings. Whether or not Aristotle intended chaps 8 and 9 of A to occupy their present position (H von Arnim, *Wiener Studien*, XLVI [1927-28], pp. 22-24, E von Ivánka, *Scholastik*, IX [1934], pp 524-525, 542) is immaterial to the present study which is concerned only with the fact that the critiques in A, chap 9 and M, chaps 4 and 5 are outlines of arguments excerpted from various earlier writings; the closing words of the critique in M say as much: ἀλλὰ περὶ μὲν τῶν ἰδεῶν καὶ τοῦτον τὸν τρόπον καὶ διὰ λογικωτέρων καὶ ἀκριβεστέρων λόγων ἔστι πολλὰ συναγαγεῖν ὅμοια τοῖς τεθεωρημένοις (1080 A 9-11). The similar objections referred to cannot be those of A, chap 9 which are absent from M (i. e. 991 B 9 ff.), since they deal with the ideas as numbers and so would be out of place here; in 991 A 18 where the word συναγαγεῖν is used of arguments not given, Alexander says that these arguments occurred in the περὶ ἰδεῶν, and he refers to the same work at 990 B 17 in connection with the "third man" argument of which Aristotle says οἱ ἀκριβέστεροι τῶν λόγων . . . λέγουσιν. So in 1080 A 9-11 Aristotle seems to be referring to works like the περὶ ἰδεῶν as the source from which this outline has been drawn and in which more circumstantial discussions are to be found (cf. H. Karpp, *op. cit.*, *Hermes*, LXVIII [1933], pp 386-387).

Here must be considered the other passages in the *Metaphysics* where the occurrence of the first person plural has induced Jaeger to assign certain sections to an "original" *Metaphysics* written while Aristotle still considered himself to be a Platonist. In Book B there are two such passages, 997 B 3-5 (ὡς μὲν οὖν λέγομεν τὰ εἴδη αἴτιά τε καὶ οὐσίας εἶναι καθ' αὑτὰς εἴρηται ἐν τοῖς πρώτοις λόγοις περὶ αὐτῶν) and 1002 B 12-14 (ὅλως δ' ἀπορήσειεν ἄν τις διὰ τί καὶ δεῖ ζητεῖν ἄλλ' ἄττα παρά τε τὰ αἰσθητὰ καὶ τὰ μεταξύ, οἷον ἃ τίθεμεν εἴδη); of these Jaeger says, "Die beiden Stellen erlauben uns das ganze zweite Buch mit sicherheit auf die ältere Fassung der Metaphysik zurückzuführen: es ist in

einem Zuge mit dem ersten geschrieben" (*Aristoteles*, p. 181). Elsewhere in Book B, however, and even in the immediate environs of these sentences (cf. 997 B 1-3, 8-12, 1002 B 23, 27-30) those who believe in the ideas are referred to in the *third* person plural; this Jaeger explains by supposing that B in its original form consistently used the first person plural of the Platonists and that Aristotle in recasting the book changed this form of reference but inadvertently let these two sentences stand unchanged (*Aristoteles*, pp 221-222). Now 997 B 3-5, on Jaeger's interpretation, does not presuppose the refutation of the theory of ideas while in Book K, chaps. 1-8, which represents a course parallel to B Γ E, 1059 B 3 obviously treats the theory as already refuted; Jaeger therefore argues that K, chaps. 1-8 belonged to an earlier form of the *Metaphysics* in which stood chap. 9 of A, while Book B belonged to a later form in which chap. 9 was dropped from A to be replaced by M, chaps. 4 and 5. If this were so, however, we should have the first person plural referring to the Platonists in a book (B in its original form) that is later than one in which the ideas are treated as a theory already disproved and the Platonists are referred to in the *third* person (K). No assumption of "earlier forms" of K can avoid this; on Jaeger's reconstruction the earliest form of K must have treated the ideas as "finished business" so that Aristotle could not speak as one who held the theory, and the earliest form of B with its first persons plural must have been later than the omission of A, chap. 9 and so later than the earliest form of K. Such a state of affairs would mean that the form of the verb in a given book would be no evidence that Aristotle still considered himself to be a Platonist and no indication of the date of the book in which it might stand. The fact is, however, that neither occurrence of the first person plural in B identifies Aristotle as a Platonist. The first (997 B 3-5) means not "In der Einleitung ist gesagt worden, dass wir die Ideen als Ursachen wie auch als an sich seiende Wesenheiten annehmen" (Jaeger, *Aristoteles*, p. 180) but "In what sense we mean that forms are causes and substances in themselves has been said in the first discussions about them" (cf Alexander, *Metaph.*, p. 196, 24-25: τὸ δὲ ὡς μὲν οὖν ἴσον ἐστὶ τῷ πῶς μὲν οὖν). The πρῶτοι λόγοι περὶ αὐτῶν refers neither to A,

chap. 9, which is simply a list of arguments *against* the ideas, nor to A, chap. 6, where the ideas appear as objects of the sciences and as formal causes (R. M. Jones in a manuscript note; cf. H. von Arnim, *Wiener Studien*, XLVI [1927-28], p. 15); at any rate, Aristotle here refers to his own doctrine of form which does *in part* agree with that of the Platonists, differing only in that the latter "separate" the form while he does not. So in 1002 B 12-14 the εἴδη which Aristotle assumes are in certain respects the same as those of the Platonists, and the following discussion shows clearly that Aristotle is intent upon indicating the point at which the latter went astray and so gave their εἴδη characteristics which distinguish them from his (cf. 1002 B 27-32: *καὶ γὰρ εἰ μὴ καλῶς διαρθροῦσιν οἱ λέγοντες ἀλλ' ἔστι γε τοῦθ' ὃ βούλονται . . . ἀλλὰ μὴν εἴ γε θήσομεν τά τε εἴδη εἶναι καὶ ἓν ἀριθμῷ τὰς ἀρχὰς ἀλλὰ μὴ εἴδει, εἰρήκαμεν ἃ συμβαίνειν ἀναγκαῖον ἀδύνατα* [see also note 130 *supra*]). The first persons plural in 1086 B 16-19 (*εἰ μὲν γάρ τις μὴ θήσεται . . . ἀναιρήσει τὴν οὐσίαν ὡς βουλόμεθα λέγειν*, cf. Ross, *Metaphysics*, II, p. 463) and in 1091 A 31-33 (*. . . πότερόν ἐστί τι ἐκείνων οἷον βουλόμεθα λέγειν αὐτὸ τὸ ἀγαθὸν καὶ τὸ ἄριστον*) do not indicate that Aristotle speaks as a Platonist either (*Aristoteles*, pp 190-196). So far as concerns the first, Aristotle's own doctrine asserted the separateness of substance, and thus far he expressly agrees with the Platonists (cf. 1040 B 27-30). In this passage as in the supposedly later Z Aristotle expressly says that the root of all the difficulties with the theory of ideas is the separation of the *universals* as substances (1086 B 6-7). As regards the second passage, Aristotle identifies himself with neither side of the dilemma, with those who say that any of the "elements" is *αὐτὸ τὸ ἀγαθόν* nor with those who make the good posterior to the "elements." As he says himself, his point of difference with the former view is not that it makes the first principle good but that it makes it "the one" or an "element" (1091 B 1-3, 19-22). He asserts *αὐτὸ τὸ ἀγαθὸν καὶ τὸ ἄριστον* as his own doctrine which, like his doctrine of form, he takes to agree with that of Plato to a *certain* extent; but the differences with the Platonists of all kinds are so explicit and so sharp in N, chap 4 (cf. 1091 B 13-1092 A 8) that it is absurd to take the single word *βουλόμεθα* as evidence that the author of Book N thought of himself as in any

way a Platonist. On these passages in Books B M N see H. von Arnim, *Wiener Studien*, XLVI (1927-28), pp. 15-18. (See also *A. J. P.*, LXI [1940], pp. 183-5 where, in an essay published after the present note had been completed, Erich Frank discusses some of the passages in question and rejects the conclusion drawn from them by Jaeger.) For the many divergent theories occasioned by the occurrence of the first person plural in Aristotle's critique the note of Robin (*Idées et Nombres*, note 89[1], pp. 82-3) is still instructive.

APPENDIX III

Note 134 on Page 226

Alexander (*Metaph.*, p. 78, 9-25) suggests that Aristotle does not mean to make a sharp distinction of two classes of arguments but rather to indicate that some of the proofs of the Platonists err in one way and some in both respects. Possibly because he sees that this would still imply that *some* of the arguments were valid proofs that could be refuted only on the second ground, he adds a second suggestion: Aristotle charges that some of the arguments are absolutely false. These, therefore, he does not now mention but attacks only those that seem to have some validity, for, if it be shown that *these* either do not prove the proposition or require the assumption of ideas not admitted by the Platonists, there is no need of further argument to overthrow the theory. Now it cannot be doubted that Aristotle believed that the arguments which he does mention here were invalid demonstrations; Alexander himself in commenting on the arguments "from the sciences," from "the one over many," and from "the object of thought" states the contention that they fail to prove the proposition as well as the argument that they would prove too much (*Metaph.*, pp. 79, 15-19; 81, 7-10; 82, 6-7). Nevertheless, Aristotle says nothing about the invalidity of these proofs in this passage where his language seems rather to imply a strict distinction between two types of argument. Alexander, therefore, suggests some examples of the invalid demonstrations to which Aristotle seems to refer: 1) If truth is something real, there would be ideas, for none of the phenomenal objects is true. 2) If there is memory, there are ideas, for the object of memory is stable (τοῦ μένοντος). 3) The correlate of number is existent, but the phenomena are not existent (ὄντα), so that the correlate of number must be the ideas 4) Definitions refer to existent things and none of the phenomena is existent Asclepius (*Metaph.*, pp. 71, 29-73, 25) develops these four arguments in a Neo-Platonic fashion (cf. ἔστιν ἄρα ἰδέα μνήμης παρὰ τῷ δημιουργῷ and οἱ γὰρ κυρίως ἀριθμοὶ . . . παρὰ τῷ δημιουργῷ); and he further confuses Alexander's point

by supposing that Aristotle means by the first class 1 and 2 and by the second 3 and 4 (Asclepius, *ibid.*, pp. 72, 17-38; 73, 28-37). Syrianus (*Metaph.*, p. 109, 28-29) thinks that Aristotle's first charge refers not to any demonstration but to the argument from intuition: ἐνίοτε μὲν καὶ ἐπιβολαῖς ἐχρῶντο νοεραῖς οἱ ἄνδρες, καὶ εἰκὸς ὅτι διὰ ταύτας οὔ φησιν αὐτούς ποτε συλλογίζεσθαι. This interpretation is significant as indicating that he did not take Aristotle's remark as a reference to further demonstrations treated in the περὶ ἰδεῶν (cf. *ibid.*, pp. 120, 33-121, 4; 195, 13-16 [Aristotle, *frag.* 185]). Philippson (*Riv. di Filologia*, LXIV [1936], p. 121, n. 1) states that the νῦν in Alexander's remark about these four arguments (τῶν μὲν τοιούτων οὐδενὸς μνημονεύει νῦν) shows that Alexander must have found them in the περὶ ἰδεῶν; but there is no reason for pressing the word in this way, and Alexander's own uncertainty concerning the meaning of the passage is incompatible with such an interpretation (cf. also οἷος εἴη ἂν . . . [p. 78, 13]). The fact that Alexander mentions no source for the four examples which he gives here although he refers to the περὶ ἰδεῶν for the arguments which follow (*Metaph.*, pp. 79, 3-5; 85, 11-12) rather suggests that these demonstrations, at least in the form which they have here, were not given in the περὶ ἰδεῶν. *Frag.* 186 (ἰστέον ὅτι οἱ ὅροι τῶν καθόλου καὶ ἀεὶ μενόντων εἰσίν, ὡς καὶ Ἀριστοτέλης εἴρηκεν ἐν τοῖς περὶ ἰδεῶν κτλ.) might seem to assure the place in that essay of the fourth example; but it is rather parallel to *Metaphysics* 987 B 6-7, 1078 B 15-32, 1086 A 37-B 7, so that Karpp (*Hermes*, LXVIII [1933], pp. 388-389) is right in assigning its ultimate origin to the *historical* section of the essay.

Arguments 1 (εἰ ἔστι τι τἀληθές) and 4 (ὁ τοὺς ὁρισμοὺς τῶν ὄντων εἶναι λέγων) are merely formalizations of the epistemological reason given by Aristotle in his historical account of the origin of the theory of ideas (*Metaphysics* 1078 B 12-17, 987 A 33-B 1, 987 B 4-8); the notion that the phenomenal world, being γιγνόμενον and so not strictly ὄν, cannot be "true" is found frequently in the Platonic dialogues (cf. *Phaedo* 65 B-66 A, 83 A-B; *Philebus* 59 A-C; *Timaeus* 29 B-C, 49 D-E; *Republic* 511 E; and on the objective sense of ἀλήθεια in Plato: Peipers, *Ontologia Platonica*, pp. 152 ff.; Bury, *Philebus of Plato*, pp. 201 ff.), and this notion can be regarded as the basis of Alexander's second

argument "from the sciences" (ὧν ἐπιστῆμαί εἰσι, ταῦτα ἔστιν [*Metaph.*, p. 79, 8-11], cf Arius Didymus, *frag. phys.* 1 [*Dox. Graeci*, p. 447 A 1-9, B 1-8]).

Argument 3 (ὁ τὸν ἀριθμὸν ὄντος εἶναι λέγων) seems to be, as Alexander himself says, similar to 4 (n. b. the version of LF sums them up together: εἴπερ καὶ ὁρισμοὶ καὶ ἀριθμός ἐστι); ἀριθμός like ὁρισμός must refer to an existent object and, since the phenomena are not ὄντα, that object must be the ideas. The ἀριθμός which implies a correlate, however, is not a self-subsistent entity, for example αὐτοὶ οἱ ἀριθμοί of *Republic* 525 D, for against such self-subsistent numbers it is just the present assumption which Aristotle brings as a refutation: ἀεὶ ὁ ἀριθμὸς ὃς ἂν ᾖ τινῶν ἐστιν (*Metaphysics* 1092 B 19-20, 991 B 13-21, 1087 B 33-1088 A 14; cf. Alexander, *Metaph.*, p. 86, 5-6); ἀριθμός, then, must here be understood as the "sum" which is the result of "numbering" (cf. *Theaetetus* 198 C [τὸ δὲ ἀριθμεῖν γε οὐκ ἄλλο τι θήσομεν τοῦ σκοπεῖσθαι πόσος τις ἀριθμὸς τυγχάνει ὤν], 204 D [ἐν τοῖς ὅσα ἐξ ἀριθμοῦ, ὁ τοῦ πλέθρου ἀριθμός, ὁ ἀριθμὸς πᾶς], cf. J. Klein, "Die griechische Logistik," *Quellen und Studien zur Geschichte der Mathematik*, Abt. B, III [1934], pp. 53-54). Even so, however, the argument that "number" in this sense cannot have phenomena for its correlate because it must be the number of something existent disregards Plato's distinction of two kinds of "arithmetic," or rather it takes for granted the doctrine that the correlates of the true and exact arithmetic are not phenomenal "units," which are not real units at all, but indivisible units which are not to be found in the sensible world but are conceived by thought alone (cf. *Republic* 525 D-526 A, *Philebus* 56 D-57 D, Klein, *op. cit.*, pp 33-35, 47-50, 55-56) Only on this assumption is it intelligible how the fact that the phenomena are οὐκ ὄντα should require the assumption of non-sensible entities and allow an argument from ἀριθμός parallel to that from ὁρισμός. It remains to note the significant fact that the conclusion of this argument is not the existence of "intermediate mathematicals" or non-sensible numbers other than ideas but of *ideas*.

The brevity of Alexander's account of argument 3 has very nearly obliterated its meaning; but argument 2 (εἰ μνήμη ἔστιν, ἔστι τὰ εἴδη) is still more troublesome, for as it stands it plainly

asserts that *only* the ideas can be remembered since memory cannot have for its object any phenomenon. Yet Plato defined μνήμη as the retention of sensation or knowledge, spoke of memory-images which are "false," and treated the recollection and memory of the ideas as only special cases of those functions (*Philebus* 34 A-C, 39 C [Olympiodorus, *In Philebum*, p. 267, Stallbaum]; *Theaetetus* 191 D, *Phaedo* 73 D; see *supra* page 24 on *Topics* 125 B 4-14 and note 53). Even in the "etymology" of *Cratylus* 437 B (μνήμη παντί που μηνύει ὅτι μονή ἐστιν ἐν τῇ ψυχῇ ἀλλ' οὐ φορά), which might seem to have been the origin of the argument here (ἡ γὰρ μνήμη τοῦ μένοντος), the persistence is predicated of something *in the soul* and this would be no more the idea than it would be a phenomenal object. Since Plato himself speaks of "memory-images" of both particulars and ideas and assumes that images of both kinds may be retained, "forgotten," and "recovered," we cannot suppose him to have argued that the mere memory of a thing is proof that that thing must be an idea. Yet this very argument is elsewhere ascribed to Plato by name. From the four books which Alcimus, a pupil of Stilpo, wrote against Amyntas, a pupil of Plato, Diogenes Laertius has preserved some excerpts, among which stands the following: Πλάτων ἐν τῇ περὶ τῶν ἰδεῶν ὑπολήψει φησίν, εἴπερ ἐστὶ μνήμη, τὰς ἰδέας ἐν τοῖς οὖσιν ὑπάρχειν διὰ τὸ τὴν μνήμην ἠρεμοῦντός τινος καὶ μένοντος εἶναι· μένειν δ' οὐδὲν ἕτερον ἢ τὰς ἰδέας (Diog. Laert., III, 15). There is nothing like this in the dialogues; the reference to *Phaedo* 96 B given by the editors (cf. H. Breitenbach et al., *Diogenis Laert. Vita Platonis*, p. 10; Diels, *Frag. der Vorsok.*[5], I, p. 198, Wyttenbach on *Phaedo* 96 B) is surely mistaken, for there Socrates merely refers to his early reflections on mechanistic theories of knowledge and, even so, there is no question of the stability of the *objects* of memory (ἐκ τούτων δὲ [*scil.* τῶν αἰσθήσεων] γίγνοιτο μνήμη καὶ δόξα, ἐκ δὲ μνήμης καὶ δόξης λαβούσης τὸ ἠρεμεῖν, κατὰ ταῦτα γίγνεσθαι ἐπιστήμην). Since Alcimus was trying to prove Plato's dependence upon "Epicharmus" (cf. Wilamowitz, *Platon*, II, p. 28, n. 2) and since he ascribes to Plato the doctrine that each idea is ἀΐδιόν τε καὶ νόημα (Diog. Laert., III, 13; apparently from the rejected suggestion at *Parmenides* 132 B-C, since Alcimus continues: διὸ καί φησιν ἐν τῇ φύσει τὰς ἰδέας ἑστάναι, καθάπερ παραδείγματα,

κτλ. [= *Parmenides* 132 D]), it is perhaps unnecessary to consider his remarks on Academic theory very seriously. (R. E. Witt, *Albinus and the History of Middle Platonism*, p. 71, goes so far as to take this as evidence that some members of the Academy contemporary with Alcimus believed the ideas to be thoughts of God; but cf. Cherniss, *A. J. P.*, LIX [1938], p. 355 and *ibid.*, n. 4.) Nevertheless, his statement of the argument referred to by Alexander shows that it was ascribed to the Academy (or, rather, to Plato himself) at the end of the 4th century B. C., and, if it is not due to Alcimus' own misunderstanding (cf. G. C. Field, *Plato and His Contemporaries*, p. 234), he and Alexander may have derived it from the same ultimate source. In any case, the argument *as stated* could not have been put forward by Plato, it does, however, bear a close resemblance to that which Aristotle refers to as τὸ νοεῖν τι φθαρέντος (*Metaphysics* 990 B 14, see page 229 *supra*) and may possibly have been a further disfigurement of it (n. b in Alexander's report of the νοεῖν τι φθαρέντος the contention καὶ γὰρ φθαρέντων τούτων μένει ἡ αὐτὴ ἔννοια [*Metaph*, p. 81, 27-28]; see page 273 *supra*)

APPENDIX IV

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Between the expositions of these two forms of the argument two others are given (p. 84, 7-21). Of these the first, ascribed to "the sophists" asserts that, if when we say "man walks" we mean neither the idea of man nor any particular man, we must be referring to some "third man" apart from these. The occasion for this sophistical argument is said to have been the separation of the common attribute from the particulars, the procedure of those who posit the ideas. The second form, said on the authority of Phanias in his book against Diodorus to have been introduced by the sophist Polyxenus, argues that, if "man" exists by participation in the idea, there must be some man whose existence is relative to the idea; but this can be neither "absolute man," which *is* the idea, nor a particular man, so that the man whose existence is relative to the idea must be some "third man."

There are certain characteristics of this section which arouse suspicion as to its authenticity. In commenting on *Metaphysics* 991 A 2 Alexander, having summarized the argument which in our passage is ascribed to Aristotle and stands *fourth* in the list, says of it· ἔστι δὲ τὸ νῦν λεγόμενον ὑπ' αὐτοῦ ὃ ἐξηγούμενοι τὸν τρίτον ἄνθρωπον δεύτερον ἐθήκαμεν (*Metaph.*, p. 93, 6-7). This implies that in our passage the argument ascribed to Aristotle followed directly that ascribed to Eudemus. The intermediate forms of the argument are, moreover, disregarded by the version of LF, by Syrianus, and by Asclepius, though they certainly were present in the text which the Pseudo-Alexander on *Sophistici Elenchi* had before him (see below and note 194 *supra*). As to the text of pp 83, 34-85, 12 itself, there is first the fact that the word εἰσάγειν employed in introducing each of the two intermediate arguments has a different meaning from that which it bears at the beginning of the whole passage and in the summarizing remarks of Alexander at the end. In these passages the subject of εἰσάγων (p. 83, 34) and εἰσάγοντα (p. 85, 8) is not Aristotle or Eudemus or their *reductio* of the Platonic argument

but the Platonic argument itself which, Alexander says, " introduces the third man " (so also LF: *οἱ τὰς ἰδέας δεικνύντες λόγοι τρίτον εἰσάγουσιν ἄνθρωπον*. Cf. Syrianus, *Metaph.*, p. 111, 27, Asclepius, *Metaph.*, pp 75, 20-21; 77, 31); but in the intermediate section the subjects of *εἰσάγων* and *εἰσάγειν* are the *λόγος ὑπὸ τῶν σοφιστῶν λεγόμενος* (p. 84, 8) and Polyxenus (p. 84, 16-17), so that here the word is equivalent not to " involve " or " imply," as it is at the beginning and end of Alexander's comment, but to " bring on in refutation." In the second place, in the last sentence of the whole section the MSS reading *τετάρτῳ* is admittedly wrong (*ἔν τε τῷ τετάρτῳ περὶ ἰδεῶν* [p. 85, 11], see Appendix II, *s. in.*, and cf. Philippson, *Riv. di Filologia*, LXIV [1936], p 120, n. 1). If the two intermediate arguments were incorporated into the text at a later date and the number raised thereby from two to four, it is easy to see how an explanatory Δ then written into the margin at p. 85, 11 could have been wrongly applied later on to the number of the book instead of the number of the argument.

The first of these two intermediate arguments, the one attributed to " the sophists," reappears almost word for word in the Pseudo-Alexander (Michael Ephesius ?), *Soph. Elench.*, p. 158, 20-26 and in the anonymous (Sophonias ?) *Paraphrasis in Soph. Elench.*, p. 54, 10-16, where it is given (wrongly! see note 194 *supra*) in explanation of the reference to the *τρίτος ἄνθρωπος* in *Sophistici Elenchi* 178 B 36-37. It has been interpreted as being " based on the ambiguity of the indefinite article, or, in Greek, of the common noun without any article "; that is, the " third man " here is supposed to be the subject of such a statement as " a man is walking down the street " where the speaker does not know *what* man it is whom he sees (Taylor, *Proc. of the Aristot. Soc.*, XVI [1915-16], pp. 260 and 270; Baeumker, *Rheinisches Museum*, XXXIV [1879], p. 79, n. 3; Philippson, *Riv. di Filologia*, LXIV [1936], p. 119); but this interpretation cannot be right, for, if it were, the argument would have nothing to do with the theory of ideas (as Taylor himself admits, *op. cit.*, p. 261) and there would be no reason to speak of the indefinite subject as a *third* man whereas our only evidence for the course of the argument represents it as directed against the theory of ideas, gives the separation of the common

predicate as the inspiration of the argument, and makes it contend not that the subject is not *some* particular man but that it is not *any* particular man. Obviously the commentators understood the subject in question to be the universal (Alexander, *Metaph.*, p 84, 15; [Alexander], *Soph. Elench.*, p. 158, 27); and this makes the argument intelligible:—When we say "man walks," the subject cannot be the idea of man (which is immobile) nor can it be any particular man, so that it must be a "third man" apart from these (so apparently Robin, *Idées et Nombres*, pp. 609-610; Ross, *Metaphysics*, I, p 195). The point of the attack is simply that the Platonic theory which asserts the existence of particulars and of ideas still fails to account for the common predicate or universal; and we have already noted a similar method of attack in the contention that the idea cannot be the same as the common predicate (*Magna Moralia* 1182 B 10-16, *Eth. Eud.* 1218 A 14-15; see note 121 *supra*) and in Aristotle's contention that there are certain essential characteristics of the class which cannot be characteristics of the idea (cf. *Topics* 148 A 14-21 [pages 3-5 *supra*]). It is interesting to see that Sextus Empiricus argues in similar fashion that ὁ γενικὸς ἄνθρωπος is neither a particular man nor yet self-subsistent man (*Adv. Math.* IV, 17 [p. 725, Bekker]; cf. *Adv. Math.* X, 288-292 [p. 534, Bekker] and W. Heintz, *Studien zu Sextus Empiricus*, pp. 278 f.).

The argument of Polyxenus is closely related to that of "the sophists" inasmuch as it too turns upon the distinction of the universal from both idea and particular; but it proceeds not from ordinary universal statements but from the *wording* of the Platonic doctrine itself. The Platonists say that "man" (ὁ ἄνθρωπος) exists by participation in the idea. Then what is ὁ ἄνθρωπος which has its existence in relation to the idea? It cannot be αὐτοάνθρωπος, for that *is* the idea, nor can it be the particular man, for they do not say ὁ τὶς ἄνθρωπος but ὁ ἄνθρωπος. Therefore the subject of this Platonic dictum must be a "third man." The use of the universal subject "man" instead of "each and every particular man" gave Polyxenus the opportunity to argue that the statement of the Platonists implied a "third man" apart from the particular and the idea although they admitted the existence of these two alone.

Although Baeumker's interpretation (*op. cit.*, pp. 72-76), according to which the "third man" of Polyxenus is meant to stand to the idea as the idea does to the particular, is no longer accepted by interpreters and so requires no extended refutation, it is based upon certain misapprehensions which still persist and are best dispelled in reference to his original interpretation. In the first place, he assumes that ὁ ἄνθρωπος (p 84, 18) means "der sinnfallige Mensch" whereas it is just the ambiguity of the term "man" that makes Polyxenus' argument possible (for either ἄνθρωπος or ὁ ἄνθρωπος = the general notion, "man"; cf. Ast, *Lex. Plat*, I, pp 177-178, *s v.*; *Index Arist.* 58 A 8 ff., n. b [Alexander], *Soph. Elench.*, p. 158, 21· ἄνθρωπος = ὁ ἄνθρωπος καὶ πᾶν τὸ κοινόν [*ibid.*, p. 158, 27]); then, assuming that πρὸς τὴν ἰδέαν is opposed to κατὰ μετοχὴν ἰδέας as the Aristotelian πρὸς ἕν to καθ' ἕν (though, even if this were true, it would not fit his interpretation, since if the third man were πρὸς τὴν ἰδέαν in this sense it would not be the *source* of the idea's nature but would itself get its meaning from its relationship to the idea), he alters the text of p 84, 20, . . κατὰ μετοχὴν ἰδέας οὔτε ὁ τὶς ἄνθρωπος to read οὔτε ὁ κατὰ μετοχὴν ἰδέας τὶς ἄνθρωπος. That the phrase, πρὸς τὴν ἰδέαν ἔξει τὸ εἶναι, however, is merely a general description of the dependence of the particular on the idea in which it participates and must not be interpreted as designating a relationship different from that of participation or imitation is amply proved, if proof be required, by Alexander's frequent reference to the particulars, which participate in the ideas or imitate them, as τὰ πρὸς τὰ εἴδη λεγόμενα τὸ εἶναι ἔχειν (*Metaph.*, pp. 97, 10-11; 123, 10-11; 86, 17-18; 56, 1-2; 58, 12-13; *et saepe*; cf. Sextus Empiricus, *Adv. Math.* X, 258)

Taylor (*op. cit.*, pp 261-262, cf Taylor, *The Parmenides of Plato*, p. 22), accepting Baeumker's transposition, believes that Polyxenus was arguing that on the Platonic theory there ought to exist between the idea of man and the particular men an "intermediate man" just as there are "mathematicals" intermediate between the ideas and sensibles. Such an interpretation is surely untenable. The relation of such an "intermediate" to the idea could not be distinguished from that of the sensible to the idea by calling the former πρὸς τὴν ἰδέαν (a phrase which Taylor translates in one place by "correlatively to the Form"

and in another by "'on the same footing' with it [*scil.* the Form]," the first of which would not distinguish the "intermediate" from the sensible, the second of which would not be true of either); the particular is commonly said to be πρὸς τὴν ἰδέαν too (cf. the passages of Alexander cited above); and such an argument would have had to proceed by explicit analogy from the case of mathematicals (cf. Aristotle, *Metaphysics* 1059 B 3-9) of which there is no hint here and would not have followed even speciously from the mere statement that κατὰ μετοχὴν τῆς ἰδέας ὁ ἄνθρωπός ἐστι.

Burnet (*Thales to Plato*, pp. 259-260) has an interpretation which is at first sight more attractive than Taylor's. He connects Polyxenus' argument with that in Plato's *Parmenides* 133 C-134 E and says that it means that the theory of participation is meaningless because "it is impossible for the particular sensible to stand in any relation to the form," so that "the only man who could participate in the form would be a third man in the intelligible and not in the sensible world, and it is quite superfluous to assume anything of the sort." In the *Parmenides*, however, the argument deals only with relative terms in both worlds (cf. 133 C-D· ὅσαι τῶν ἰδεῶν πρὸς ἀλλήλας εἰσὶν αἳ εἰσιν), master—slave, knowledge—object of knowledge, and "man" is not a relative term in this sense but only on the admission that he is πρὸς τὴν ἰδέαν (cf. the argument in Alexander, *Metaph.*, p. 86, 16-20 and note *Metaphysics* 1021 B 8-10); but in the argument of Polyxenus the statement δεῖ τινα εἶναι ἄνθρωπον ὃς πρὸς τὴν ἰδέαν ἕξει τὸ εἶναι is given as a self-evident corollary of the Platonic dictum κατὰ μετοχὴν τῆς ἰδέας ὁ ἄνθρωπός ἐστι, which it would not be if πρὸς τὴν ἰδέαν did not at least include κατὰ μετοχὴν εἶναι. Burnet in fact confused his own interpretation by accepting Baeumker's transposition, for this makes the argument state that the particular man *does* participate in the idea whereas Burnet's conclusion is that only some "third man" could participate in it. The mistake of Burnet's interpretation, however, lies in taking ὁ ἄνθρωπος (p. 84, 18) *unambiguously* as "a man" whereas Polyxenus' argument depends entirely upon the ambiguity of ὁ ἄνθρωπος.

K. von Fritz also connects the argument of Polyxenus with that concerning "relative terms" in *Parmenides* 133 C (Pauly-

Wissowa, *R.-E.*, Supplementband V, p. 722 [*s. v.* Megariker]; *Philologus*, LXXXII [1927], p. 25, n. 40) and distinguishes πρὸς τὴν ἰδέαν τὸ εἶναι ἔχειν, as meaning "to be completely like the idea," from κατὰ μετοχὴν τῆς ἰδέας εἶναι. He then takes Polyxenus to mean that "if man is man by participation in the idea of man, there must be a man that is completely like the idea; but the idea of man is not κατὰ μετοχὴν ἰδέας nor has any particular man the required likeness to the idea" This requires adding several words to the text of Alexander, since as it stands it says that *neither* the idea of man *nor* the particular man is κατὰ μετοχὴν ἰδέας. What has been said in connection with Burnet's interpretation is sufficient against this connection of Polyxenus and the *Parmenides* passage also; there is no evidence to support this interpretation of πρὸς τὴν ἰδέαν τὸ εἶναι ἔχειν either, for it certainly does not express "complete likeness" of two terms in the *Parmenides* and the passages cited above show that it is used for the relationship of *phenomena* to ideas in the *same* sense as κατὰ μετοχὴν τῶν εἰδῶν εἶναι.

Robin (*Idées et Nombres*, p. 610) does not analyze the whole argument but thinks that the particulars cannot participate in the idea "sans doute parce qu'il aurait alors la transcendance de l'Idée." (He evidently rejects Baeumker's transposition as von Fritz expressly does.) Philippson (*op. cit.*, p. 119) introduces a somewhat similar supplement to the argument to explain why the particular cannot participate in the idea ("che [*scil.* the particular man] si differenzia per le sue connotazioni individuali dall' αὐτοάνθρωπος") and seems to hold that Polyxenus' conclusion was that the "third man" must be identical with the idea ("e questo è assurdo; dunque le idee non esistono").

It will be noticed that the "third man" as used by Polyxenus and "the sophists" depends upon stressing the *difference* between the idea and the particular and urging that there is still another sense (i. e. the universal) which is different from both. Neither of these forms involves an infinite regress In both respects these two forms of the "third man" differ from the type ascribed to Eudemus and Aristotle which depends upon urging the *similarity* of the idea and the particular and which can for that reason be repeated in infinite regress as it is expressly repeated in the Aristotelian argument.

APPENDIX V

Note 182 on Page 275

There are passages in which Aristotle himself seems to assume a distinct form for each concrete individual: *Metaphysics* 1071 A 27-29 (*καὶ τῶν ἐν ταὐτῷ εἴδει ἕτερα [scil. αἴτια καὶ στοιχεῖα], οὐκ εἴδει ἀλλ' ὅτι τῶν καθ' ἕκαστον ἄλλο, ἥ τε σὴ ὕλη καὶ τὸ κινῆσαν καὶ τὸ εἶδος καὶ ἡ ἐμή, τῷ καθόλου δὲ λόγῳ ταὐτά*), 1022 A 25-27 (*ἓν μὲν γὰρ καθ' αὑτὸ τὸ τί ἦν εἶναι ἑκάστῳ, οἷον ὁ Καλλίας καθ' αὑτὸν Καλλίας καὶ τὸ τί ἦν εἶναι Καλλίᾳ*), cf. 1029 B 12-16, 1032 A 8, 1037 A 5-10, yet Aristotle regularly asserts that matter is the principle of individuation: *Metaphysics* 1016 B 32-33 (cont. 1038 B 14-15), 1034 A 5-8, 1035 B 27-31, 1074 A 31-34, *De Caelo* 278 A 10-B 8. Still, the supreme individual, God, has no material element just because he is pure actuality (*Metaphysics* 1074 A 35-37); and at the same time there are *other* immaterial individuals, the unmoved movers of the spheres (1073 A 26-38), a clear case of numerical differentiation which cannot be charged to matter (Plotinus, *Enn.* V, 1, 9: *πῶς δὲ καὶ πολλὰ οὕτως ἀσώματα ὄντα ὕλης οὐ χωριζούσης*; cf. Jaeger, *Aristoteles*, pp. 376-8 and Ross, *Metaphysics*, I, pp. cxxxix f.). In spite of the obvious difficulties the general tendency has been to insist that Aristotle himself regarded matter as the principle of plurality and the "atomic species" as the ultimate individuals (cf. Zeller, *Phil. Griech*, II, 2, pp. 339 ff.; Ross, *Metaphysics*, I, pp. cxv-cxix; Mure, *Aristotle*, p. 187; Cousin, *Mind*, N. S. XLIV [1935], pp. 172-8; De Corte, *La Doctrine de l'Intelligence chez Aristote*, pp. 198-200), although the opposite thesis has also been maintained (Rodier, *Études de la Philosophie Grecque*, p. 175) Hamelin (*Le Système d'Aristote*, pp. 406-7) holds that it was only the influence of Platonism that prevented Aristotle from ascribing all individuation to form as the logic of his system required (cf. also Werner, *Aristote et l'Idéalisme Platonicien*, pp. 76-89). Aristotle's occasional ascription of individuation to form induces Robin (*Idées et Nombres*, pp. 589-90) to suggest that Plato himself may have been on the way to admit ideas of individuals. Now the inseparability of the form from that of

which it is the form should logically require Aristotle to admit that all the particulars of a single species have numerically different forms (cf. *Physics* 209 B 23; Werner, *op. cit.*, pp 86-88). This logical necessity would not have applied to Plato's theory; but it seems not to have been this consideration which motivated Aristotle's references to form as the principle of individuation either. The passages which refer to the different forms of individuals can be matched by those in which the difference of individuals is said to be due to their matter. The former passages all refer to *living* individuals as examples; and, if with these we compare the examples cited in the latter set of passages, it appears that, when Socrates and Callias are said to differ because of their matter, the form which Aristotle has in mind is the *specific* form "man" (*Metaphysics* 1034 A 5-8· ἕτερον μὲν διὰ τὴν ὕλην, ἑτέρα γάρ, ταὐτὸ δὲ τῷ εἴδει· ἄτομον γὰρ τὸ εἶδος [cf. 1033 B 24-26, 29-32: ἄνθρωπος γὰρ ἄνθρωπον γεννᾷ]; 1074 A 31-34: εἷς γὰρ λόγος καὶ ὁ αὐτὸς πολλῶν, οἷον ἀνθρώπου, Σωκράτης δὲ εἷς) but, when the form of the individual is said to be peculiar to him, the form is not "man" but the *soul* (1022 A 25-27: ὁ Καλλίας καθ' αὑτὸν Καλλίας καὶ τὸ τί ἦν εἶναι Καλλίᾳ [here, though ζῷον is an element in the τί ἐστι, the form of the man is ἡ ψυχή, 1022 A 27-32]; 1037 A 5-10: ἡ μὲν ψυχὴ οὐσία ἡ πρώτη, τὸ δὲ σῶμα ὕλη, ὁ δ' ἄνθρωπος ἢ τὸ ζῷον τὸ ἐξ ἀμφοῖν ὡς καθόλου [cf 1035 B 27-30: ὁ δ' ἄνθρωπος . . . οὐκ ἔστιν οὐσία ἀλλὰ σύνολόν τι ἐκ τουδὶ τοῦ λόγου καὶ τησδὶ τῆς ὕλης ὡς καθόλου, so, while the individual is ἐκ τῆς ἐσχάτης ὕλης, *it is implied that he has a particular form also, which is not* "man" but the soul, 1035 B 14-16] but the individual means this particular soul and this particular body, and, since the soul is the form of the man, "Socrates" may mean either the soul of Socrates or the concrete individual [cf. 1032 A 8]; in 1071 A 19-21 "man" as a universal is said to be non-existent, so that the peculiar form of the individual man in 1071 A 27-29 is probably the soul [cf. 1071 A 3 where the material and formal causes are given as ψυχὴ καὶ σῶμα] and the ἴδιον εἶδος of 1071 A 14 would then be the soul and *not* the atomic species "man" [in *De Anima* 407 B 23-24 the ἴδιον εἶδος of each living body is the soul]). Living organisms, then, have form in two senses; and Aristotle's references to the different forms of individuals within a single species are due to the fact that for him the soul

peculiar to each body is also the form, the primary substance of the organism (*Metaphysics* 1037 A 5, A 28-29; *De Anima* 412 A 19-28, B 10-12; in the *Eudemus* [*frag.* 46 = Simplicius, *De Anima*, p. 221, 28-30] Aristotle called the soul εἶδός τι which Jaeger [*Aristoteles*, pp. 42-44] takes as an indication of the "Platonism" of that dialogue, not observing that in *Metaphysics* 1077 A 32-33 he still considers the soul to be οὐσία as being εἶδος καὶ μορφή τις). The way in which Plotinus later assumed ideas of individuals shows a striking resemblance to the contradiction as it developed in Aristotle's remarks on individuation. The "individuals" for which Plotinus posits ideas are not the particular phenomena but only living organisms, and these "ideas of individuals" are simply the individual *souls* (*Enn.* V, 7: ἢ εἰ μὲν ἀεὶ Σωκράτης καὶ ψυχὴ Σωκράτους, ἔσται αὐτοσωκράτης ὡς λέγεται ἐκεῖ, καθ' ὃ ἡ ψυχὴ καθέκαστα καὶ ἐκεῖ); as particular rather than universal, however, not Socrates but only "man" has an idea (*Enn.* V, 9, 12; the remainder of this chapter should be interpreted not with Bréhier [*Plotin, Ennéades*, V, p. 159] but with Harder [*Plotins Schriften*, I, pp. 66-7], cf. Proclus, *In Parmenidem*, V, pp. 54-55, 52-54, 44-47 [Cousin]). The tendency to ascribe individuation to form appears, then, to be a result of the identification of soul with form; and, if Plato had been inclined to assume different ideas of individuals, one would expect this to be indicated by the characterization of souls as ideas Now, Aristotle takes it for granted that the Platonists did not posit ideas of individuals, which implies that they did not speak of the individual souls as ideas; and Albinus includes among those things for which "most of the Platonists" refuse to admit ideas "particulars such as Socrates and Plato" ([Alcinous], *Didaskalikos*, chap. IX, p. 163, Hermann),—which statement, however, might be taken to imply that he knew of *some* Platonists who did posit such ideas. Plato himself in the dialogues consistently distinguishes from the ideas the souls, which for him are the real individuals (*Laws* 959 A-B, cf. *Phaedo* 115 C-E, *Republic* 469 D; see *Metaphysics* 1037 A 8, 1043 B 3-4 and the pseudo-Platonic *Alcibiades* I, 130 C [on which dialogue see the references in Shorey, *What Plato Said*, pp. 652-3]); this is openly stated even in the *Phaedo* (103 E-105 E; cf. Robin, *Platon*,

pp. 175-6) where the close relationship of soul and ideas is especially stressed (*Phaedo* 79 A-80 B), it is clearly assumed in the *Timaeus* where the ideas are independent of the Demiurge and are ἀΐδια whereas the soul is dependent upon him (cf. *Timaeus* 43 D and 41 A-D) and where as the cognizing subject it is distinguished from the objects both sensible and intelligible (37 B-C), and it is implied in *Laws* 904 A where the soul is said to be ἀνώλεθρον but *not* αἰώνιον (cf. *Timaeus* 37 D and Frutiger, *Les Mythes de Platon*, p. 128, n. 1). In Plato's writings, at any rate, the soul is not an idea (*Theaetetus* 184 D [εἰς μίαν τινα ἰδέαν εἴτε ψυχὴν εἴτε ὅτι δεῖ καλεῖν] contradicts this no more than does the συνεκεράσατο εἰς μίαν πάντα ἰδέαν of *Timaeus* 35 A [cf. Zeller, *Phil. Griech.*, II, 1, p. 660, n. 4]). Yet Diogenes Laertius (III, 67) ascribes to Plato himself the definition of soul as ἰδέαν τοῦ πάντῃ διεστῶτος πνεύματος. The last word indicates a Stoic origin; the rest of the definition shows that the author of it found his source in Posidonius whose followers, according to Plutarch (*De An. Proc.* 1023 B), ἀπεφήναντο τὴν ψυχὴν ἰδέαν εἶναι τοῦ πάντῃ διαστατοῦ κατ' ἀριθμὸν συνεστῶσαν ἁρμονίαν περιέχοντα (cf. Macrobius, *In Somn. Scip.* I, 14, 19: Posidonius ideam [*scil.* dixit animam]; see L. Edelstein, *A. J. P.*, LVII [1936], pp. 302-4). The definition of Posidonius, in turn, goes back to that of Speusippus (*frag.* 40) who is reported by Iamblichus (*apud* Stobaeus, *Ecl.* I, 49, 32 [I, p. 364, 4-5, Wachsmuth]) to have defined soul with the phrase ἰδέα τοῦ πάντῃ διαστατοῦ. On the basis of these definitions and the argument that ἀριθμός in Xenocrates' definition of soul as ἀριθμὸς ἑαυτὸν κινῶν means essentially the same thing as ἰδέα in the definition of Speusippus it has been contended that in the Academy both the world-soul and the individual souls were defined as "form" (P. Merlan, *Philologus*, LXXXIX [1934], pp. 197 ff.). Now the definition of Posidonius, in whatever writing of his it may have occurred, certainly referred to Plato's description of the creation of the world-soul in *Timaeus* 35 A-37 C; this is proved not only by Plutarch's consideration of it in this connection but also by the fact that the definition itself rests upon an interpretation of the indivisible and divisible essences of *Timaeus* 35 A. If Posidonius adopted the definition from Speusippus, it is likely that he too gave it as an interpretation

of the *Timaeus* (the definition of Severus, connected by Iamblichus with that of Speusippus, most probably occurred in his commentary on the *Timaeus* [cf. Proclus, *In Timaeum*, I, 204, 17; II, 152, 27-28 and 153, 21-25, Diehl] and may have come to him from Posidonius [cf. with Severus' composition of the soul from the point and extension the account of Posidonius by L. Edelstein, *loc. cit.*]); obviously the πάντῃ διαστατόν was suggested by *Timaeus* 36 E: ἡ δ' ἐκ μέσου πρὸς τὸν ἔσχατον οὐρανὸν πάντῃ διαπλακεῖσα κύκλῳ τε αὐτὸν ἔξωθεν περικαλύψασα, and the κατ' ἀριθμὸν συνεστῶσαν ἁρμονίαν περιέχοντα, if it represents some additional phrase in Speusippus' definition, stood for the σύστασις described in *Timaeus* 35 B-36 B and summed up by the phrase λογισμοῦ δὲ μετέχουσα καὶ ἁρμονίας ψυχή of 36 E-37 A. If the definition is simply an interpretation of the *Timaeus*, however, there is no reason for supposing that the word ἰδέα applied to the soul means that Plato in his "lectures" called the soul an idea although he consistently refused to do so in the dialogues. It has been doubted that Speusippus meant to use the word in the sense of "idea" or that Posidonius so understood it (Zeller, *Phil. Griech.*, II, 1, p. 784, n. 1; R. M. Jones, *The Platonism of Plutarch*, pp. 74 and 76). How Posidonius may have understood it does not here concern us. As for Speusippus, if he set forth the definition as his own, he could not have taken it in the sense of "idea," since he rejected the ideas altogether; nor could he have made it a mathematical entity as being *intermediate* between the νοητά and αἰσθητά (as the Posidonians did according to Plutarch [*De An. Proc.* 1023 B-C]), since he abolished the ideas and identified the νοητά with the μαθηματικά. Furthermore, since according to Aristotle (*Metaphysics* 1028 B 21-24, 1090 B 13-20) he made the principles of magnitude and of soul different and these οὐσίαι were independent of one another, it is difficult to see how he could himself have believed the soul to be the ἰδέα τοῦ πάντῃ διαστατοῦ in any sense whatever. It is, however, possible that he gave the definition only as his interpretation of what Plato meant in the *Timaeus* without himself subscribing to the doctrine; in that case the source for the word ἰδέα in the definition was probably the phrase, συνεκεράσατο εἰς μίαν πάντα ἰδέαν, of *Timaeus* 35 A. At any rate, it is significant that Aristotle takes no notice of this definition either

in his criticism of the *Timaeus* or in his consideration of other theories of the soul; it can hardly have represented any recognized Platonic tradition or Academic doctrine. Indeed, the definition looks like an attempt to defend the *Timaeus* against the criticism of Aristotle (cf. *De Anima* 407 A 2-3: οὐ καλῶς τὸ λέγειν τὴν ψυχὴν μέγεθος εἶναι) by urging that the soul is not there a magnitude but the ἰδέα of the extended body in the same way as it is an εἶδος for Aristotle himself (cf. Aristotle's identification of πέρας with the εἶδος or οὐσία of the extended body: *De Caelo* 293 B 12-15, *De Generatione* 335 A 21, *Physics* 209 B 3-5 [note 70 *supra*]). That Plato did not call the soul an idea receives some further confirmation from Plutarch's objection to the Posidonian interpretation (*De An. Proc.* 1023 C) that *it* does just this, which indicates that Plutarch knew no Academic tradition to support such an interpretation and—inasmuch as he does not make this objection to Xenocrates' interpretation—shows that he is not aware that Xenocrates may so have designated the soul. Xenocrates' own definition is simply an interpretation of the *Timaeus* (Plutarch, *op. cit.* 1012 D-F [Xenocrates, *frag.* 68], 1013 C-E); he interpreted the indivisible essence as the one, the divisible as the indefinite dyad, their mixture as the production of number; the addition to this of the mixture of the same and the other, which he held to be the principles of rest and motion, then resulted in soul (cf. Heinze, *Xenokrates*, pp 65-6). Since he identified ideas and numbers, it might seem that he could have called the soul, which was for him a self-moving number, a kind of idea; but even he apparently avoided this because he held the ideas to be essentially immobile and the soul essentially mobile. Nor could he have made the soul a mathematical entity because of its "intermediate" position, since he identified numbers and ideas. (Merlan's attempt to show that the doctrine of soul as "form" was Academic by identifying it with the "intermediate mathematicals" results in the impossible identification of Xenocrates' δοξαστόν with μαθηματικόν, *op. cit.*, pp. 203-4.) But Aristotle himself furnishes the most conclusive evidence that the soul was not called an idea or a "form" by Plato or Xenocrates. In the *De Anima* (404 B 16-30) where he adduces

the theories of these philosophers to show that those who are concerned with the soul as cognitive identify it with the objects which it knows, although he argues that they constructed the soul of the same elements as τὰ ὄντα, he does *not* say that they held the soul to be an idea, though this would have been the simplest way of proving his contention; nor in his special criticism of Xenocrates' definition (*De Anima* 408 B 32-409 B 18), where he develops the absurdities of a number in motion, does he intimate that the soul is an εἶδος, although, had he been able to attribute this designation to Xenocrates, it would have admirably strengthened his argument by enabling him to point out, as he does in arguing against idea-numbers (*Metaphysics* 991 B 21-22), that a unitary "form" cannot be an aggregation of units (for so he treats Xenocrates' "number") and cannot be in motion since ideas are rather the cause of rest (cf *Metaphysics* 988 B 3-4). Yet nowhere does he suggest that the Platonists called the soul an idea or a form, although he might have been expected to do so particularly in *De Anima* 432 A 2 where he himself calls νοῦς the εἶδος εἰδῶν, since in 429 A 27-28 he does refer with qualified approval to the theory that the soul is τόπος εἰδῶν (see note 338 *supra*).

There is then no reason to suppose that the individual souls were ever identified with ideas in the Academy; and consequently the motive which Aristotle had for assuming different forms of individuals and Plotinus for positing "ideas of individuals" was absent from Plato's system.

APPENDIX VI

Note 204 on Page 304

The long debate concerning the meaning of τὸ πρότερον καὶ ὕστερον in the Platonic theory of number, the "kind of number" referred to in *Eth. Nic.* 1096 A 17-19, and the "reconciliation" of that passage with *Metaphysics* 1080 B 11-14 (see e. g. Trendelenburg, *Platonis de Ideis et Numeris Doctrina*, pp. 80-82, Zeller, *Phil. Griech.*, II, 1, p. 681, n. 4, Stewart, *Notes on the Nicomachean Ethics*, I, pp. 77-80) should have been terminated by the article of J. Cook Wilson in *Class. Rev.*, XVIII (1904), pp. 247-260, which on these points at least is definitive. The article is not mentioned by Robin in his discussion of the question (*Idées et Nombres*, pp. 612-626), and Stenzel, without consideration of either Robin's treatment or Wilson's, gives an exegesis based upon misconceptions refuted a score of years before and upon what Wilson had shown to be a mere mistranslation of Greek (*Zahl und Gestalt*, p. 118, n. 3); it is therefore well to list those of Wilson's conclusions which are pertinent here:

1) *Eth. Nic.* 1096 A 17-19 says that the Platonists did not admit one idea corresponding to a group the members of which stand to one another in the relation of πρότερον καὶ ὕστερον and that consequently they did not posit a single idea of the numbers. There is no contradiction with *Metaphysics* 1080 B 11-14 according to which the ideal numbers, as distinguished from the mathematical, have τὸ πρότερον καὶ ὕστερον; this, taken together with the *Ethics* passage, would mean only that the ideal numbers (whether ideas of numbers or "idea-numbers") could have no single idea of number corresponding to them as a group, no idea of ἀριθμός in general (*op. cit.*, § 1).

2) The doctrine of ἀσύμβλητοι ἀριθμοί arises out of the principles involved in the theory of ideas represented in Plato's writings and not out of anything peculiar to the "idea-number" theory; they are ideas of numbers, i e universals, none of which can consist of units added together (*op. cit.*, § 3 [cf.

Shorey, *De Platonis Idearum Doctrina*, p. 37, n. 3: "De portentosa voce . . . satis habeo monere omnes ideas Platonicas aeque ac numeros ideales ἀσυμβλήτους esse in se spectatas"]).

3) These ideas of number are, as universals, ἀσύμβλητοι and, as ἀσύμβλητοι, entirely outside one another in the sense that none is part of another; thus they form a series of different terms which have a definite order. The property of being ἀσύμβλητοι is sufficient and necessary to constitute a kind of ἀριθμός, a series with πρότερον καὶ ὕστερον, and this characteristic of serial order is not relative to any kind of generation or derivation of the numbers (*op. cit.*, § 5).

Aristotle in his introductory discussion of numbers as "separate substances" and "causes" (*Metaphysics* 1080 A 12-35) makes it plain that a definite serial order of numerical elements implies that these elements are ἀσύμβλητοι and, conversely, that numerical elements which are ἀσύμβλητοι must stand to one another in a definite order. The fact that in mathematical number all the units are συμβληταί, so that one number includes another, prevents the elements of mathematical number from having a definite order; whereas the serial order of ideal number is a result of the fact that the numbers which are its elements are ἀσύμβλητοι. So, if *all* units are συμβληταὶ καὶ ἀδιάφοροι, there can be *only* mathematical number (1081 A 5-7); and, if all units are ἀσύμβλητοι, this number *cannot* be mathematical (1081 A 17-21). Moreover, Aristotle argues that this latter number cannot be ideal number either (1081 A 21-29). This he does by contending that, if *all* the units are ἀσύμβλητοι, they cannot form the ordered series, 2, 3, 4, . . , because the units *in* 2, for example, must themselves have the relation of πρότερον καὶ ὕστερον one to the other. Entirely apart from the cogency of this as an argument against ideal numbers, it indicates quite clearly two important points: 1) the serial order, 2, 3, 4, . . . , was considered to be an essential characteristic of ideal number; and 2) the relation of πρότερον καὶ ὕστερον is necessarily true of any numerical elements which are ἀσύμβλητοι, since, if the units in 2 are assumed to be ἀσύμβλητοι, it is taken to follow immediately that one of these units is "prior" to the other. This is sufficient to prove Wilson's contention that

τὸ πρότερον καὶ ὕστερον is a characteristic of ideal number as distinguished from mathematical number and is connected with the nature of the former as ἀσύμβλητοι and not with any theory of the *generation* of ideal number

The ideas of number posited by the "original" theory, however, were like all the other ideas unique and simple unities. (See *Phaedo* 101 C and note 128 *supra*. At *Metaphysics* 991 B 21-22 Aristotle uses against the identification of ideas and numbers the argument: ἔτι ἐκ πολλῶν ἀριθμῶν εἰς ἀριθμὸς γίγνεται, ἐξ εἰδῶν δὲ ἓν εἶδος πῶς, on this Alexander remarks [*Metaph.*, p. 110, 15-17] that, if one should say that each idea is composed of several ideas, οὐχ ἁπλαῖ ἔτι αἱ ἰδέαι ἔσονται αὐτοῖς ἀλλὰ σύνθετοι. Cf. *Metaphysics* 1081 A 9-10. ἰδέα μὲν γὰρ μία ἑκάστου, οἷον αὐτοῦ ἀνθρώπου μία καὶ αὐτοῦ ζῴου ἄλλη μία and 1086 B 27: ἔτι δ' αὐτὸ ὃ ἔστιν ἓν ἕκαστον τιθέασιν. To refute a Platonic doctrine it is sufficient to show that its consequences are inconsistent with the basic principle of the uniqueness and simplicity, i. e. indivisibility, of the ideas [cf. Alexander, *Metaph.*, p. 87, 19-20]) Since each idea of number was unique and indivisible, these ideas of number were themselves ἀσύμβλητοι ἀριθμοί in the same sense as the "idea-numbers" of *Metaphysics* M and should have had the relation of πρότερον καὶ ὕστερον which is a concomitant characteristic of ἀσύμβλητοι ἀριθμοί as such. It follows then that *Eth. Nic.* 1096 A 17-19 *could* refer either to the "original" theory of ideas or to the theory of "idea-numbers" (cf. Wilson, *op. cit.*, § 6) The absence there of any reference to "idea-numbers" and the opening words of the sentence (*Eth. Nic.* 1096 A 17: οἱ δὲ κομίσαντες τὴν δόξαν ταύτην [cf ἐκόμισαν in *Metaphysics* 990 B 2]) taken together with the introduction of the chapter (1096 A 12-13: καίπερ προσάντους τῆς τοιαύτης ζητήσεως γινομένης διὰ τὸ φίλους ἄνδρας εἰσαγαγεῖν τὰ εἴδη) support Wilson's contention that the passage refers to the former and not to the latter, but, in any case, that the doctrine there reported belonged to the "original" theory of ideas is proved by *Metaphysics* 1079 A 15-16 (= 990 B 19-20). The argument in this passage, which occurs in a section from which Aristotle himself has excluded all consideration of "idea-numbers" and their "principles" (see pages 196-198 *supra*),

assumes that the Platonists deny the existence of an idea of number apart from the numbers of which the dyad (i. e. the idea of two, cf. 1079 A 36 = 991 A 5) is "first." This designation of the idea of two implies a fixed order of the numbers (cf. Aristotle's use of this axiom: μετὰ γὰρ τὸ πρῶτον εὔλογον καὶ ἀναγκαῖον δεύτερόν τε εἶναι, καὶ εἰ δεύτερον, τρίτον, καὶ οὕτω δὴ τὰ ἄλλα ἐφεξῆς [*Metaphysics* 1081 B 4-6]), so that we have attested for the "original" theory the two elements of the doctrine reported in *Eth. Nic.* 1096 A 17-19, a πρότερον καὶ ὕστερον of the numbers and the denial of an idea of number in general apart from these.

In the "original" theory this πρότερον καὶ ὕστερον of the ideas of number could not have signified ontological priority and posteriority. The particulars stand to the ideas in such a relationship; and in this respect each idea is called πρῶτον and its participants ὕστερα. It is to such a relationship that Plato's definition of ontological priority is applicable (see note 197 *supra*), and it is in this sense that Plato spoke of a "first two," a "first three," etc. (*Metaphysics* 1083 A 32-34, see page 304 *supra*); but "the first number" could not have been meant to signify a relationship between the idea of two and the other ideas of number in any way analogous to that which, subsisting between the idea of two and particular twos, was indicated by the term "the first two." Alexander treats as a recognized principle of Platonic doctrine the axiom that no idea is "prior" to any other, and anything which would not accord with this he holds to be inconsistent with the theory of ideas (*Metaph.*, p. 87, 8 [ἔτι ἰδέα ἰδέας οὐκ ἔστι πρότερον]; p. 105, 5-8: the logical consequences, οὐχ ἁπλοῦν ἡ ἰδέα ἀλλ' ἔσται ἐξ ἰδεῶν συγκειμένη and πρότερα ἔσται ἰδέα ἰδέας [on the assumption of the priority of genus to species], are equally destructive refutations of the theory of ideas [cf. pp. 105, 19-20 and 110, 17-18]); and Aristotle's reference to the ideas as οὐσίαι ὧν ἕτεραι μὴ εἰσιν οὐσίαι μηδὲ φύσεις πρότεραι (*Metaphysics* 1031 A 29-31) similarly implies that each and every idea is ontologically primary, while his argument there depends upon the assumption that the Platonists would deny the priority of one idea to another (*ibid.* 1031 B 1-2: ἔσονται ἄλλαι τε οὐσίαι καὶ φύσεις καὶ ἰδέαι παρὰ τὰς

λεγομένας, καὶ πρότεραι οὐσίαι ἐκεῖναι). This evidence is in perfect agreement with the writings of Plato where each idea is an unique and simple unit (see note 128 *supra*) from the absolute existence of which contingency is entirely excluded. Among entities of this nature there can be no prior and posterior of part and whole, cause and effect, factor and product; and we have seen that even genus and species are not for Plato ontologically prior and posterior one to the other (see pages 43-48 and pages 264-265 with note 174 *supra*). To this extent Trendelenburg was right in saying with reference to Plato's definition of ontological priority: " Ita certe prius et posterius ab ideis abest, quippe quae verae rerum notiones ipsae sunt conditio, ex se autem conditiones excludunt (*op. cit.*, pp. 81-82); his mistaken relegation of τὸ πρότερον καὶ ὕστερον to mathematical number was due to the gratuitous assumption that the phrase could indicate only ontological priority and posteriority Since the " original " ideas of number had τὸ πρότερον καὶ ὕστερον, this must have been a characteristic essential to their nature as universals of *number* which was at the same time not inconsistent with their nature as *ideas*.

In the *Phaedo* Socrates say that the cause of the production of two cannot be the addition of one to one or the division of one but only the participation in twoness, the idea of two (*Phaedo* 101 B-C, cf. 96 E-97 B). From this passage it is clear that the reason for positing a separate idea of each number is the same as that for positing all other ideas (cf *Phaedo* 100 B and 102 B) and that the idea of two itself is not a combination of units or a product of factors into which it can be exhaustively analyzed but is μονοειδές just as is every other idea (cf. *Phaedo* 78 D). If, however, the ideas of two, three, four, etc. are not aggregates but are all and each single, indivisible units, the question immediately arises as to what it is that distinguishes these units one from another This question serves Aristotle as a general objection to the " idea-numbers." Arguing against the " differentiation of numerical units " he contends that, since units differ neither quantitatively not qualitatively and two numbers must be either equal or unequal, if one number is neither greater nor less than another the two are

equal and therefore identical (*Metaphysics* 1082 B 1-9; cf. 991 B 26. in what do "unlike" units differ, since they are without quality?) He can only express amazement at the supposition that the number of the ideal three is not greater than that of the ideal two, although he recognizes that on the theory of unique universals of number it cannot be greater (1082 B 19-22). These passages are concerned with "idea-numbers" but with "idea-numbers" in the numerical aspect displayed by the "original" ideas of number as well; and concerning these latter, each of which is a *μονάς*, the same question must have been asked This is, in fact, the significance of the question put into the mouth of the incredulous critic in *Republic* 526 A· *ὦ θαυμάσιοι, περὶ ποίων ἀριθμῶν διαλέγεσθε, ἐν οἷς τὸ ἓν οἷον ὑμεῖς ἀξιοῦτέ ἐστιν, ἴσον τε ἕκαστον πᾶν παντὶ καὶ οὐδὲ σμικρὸν διαφέρον, μόριόν τε ἔχον ἐν ἑαυτῷ οὐδέν*; "Each unit" here is the unity of each of the numbers which are accessible to intelligence alone and which, as indivisible units, are all "equal" and quantitatively indifferent (cf. *ἑνάδες, μοναάδες, τὰ ἓν ἐκεῖνα, τὸ ἓν ἕκαστον* of the ideas in *Philebus* 15 A-B, 16 D-E; *Metaphysics* 1085 A 1. *εἰ ἔστιν ἡ δυὰς ἓν τι αὐτὴ καὶ ἡ τριὰς αὐτή . . .*, 1084 B 30: *ὡς ὅλου τινὸς καὶ ἑνὸς καὶ εἴδους τῆς δυάδος οὔσης*). Now, Alexander, commenting upon the question as put by Aristotle, says that units can differ only in position (*Metaph.*, p. 112, 11-13). He then objects that units with position are no longer units but points (cf. Aristotle, *Metaphysics* 1016 B 24-26 and 29-31, 1084 B 26-27; *De Anima* 409 A 6); but if this crude interpretation of "position" is corrected in the light of Aristotle's distinction according to which numbers and units have *τάξις* instead of *θέσις* and succession but not contact (*Categories* 5 A 30-33; *Metaphysics* 1069 A 13-14, 1085 A 3-4; *Physics* 227 A 19-21 and 29-31), the note indicates the real significance of the *πρότερον καὶ ὕστερον* of the ideas of number It is that natural order which is the essence of each of them, that which distinguishes the idea of two as "the first number" and so distinguishes each from the others by its definite position in the arrangement of all the ideal numbers. That they were distinguished from one another by this characteristic and this alone is indicated by Aristotle's attempts to argue that the ideal numbers are indistinguishable

one from another, by his connection of the quantitative indifference of the universals of number with the notion of a "first and second number" (1082 B 23), and by his use of the principle that *any* μονάδες which are ἀσύμβλητοι must have the characteristic πρότερον καὶ ὕστερον (1081 A 21-29, see above). This order, then, does not signify the ontological dependence of one number upon another; the whole arrangement is implied in the existence of each number just as "the first number" implies the existence of the subsequent terms

The denial of a separate idea of number in general is a direct result of this conception. In *Eth. Nic.* 1096 A 17-19 Aristotle does not tell *why* the πρότερον καὶ ὕστερον of the numbers led the Platonists to deny the existence of a separate idea of number. At *Metaphysics* 990 B 20, however, the implication is that "number," as the common predicate, would be "prior" to all the numbers and that would contradict the doctrine that two is "the first number." This is made explicit in *Eth. Eud.* 1218 A 1-8 where in the case of things that have τὸ πρότερον καὶ ὕστερον a separate common predicate is said to be impossible because there would then be something "prior to the first," the separate common predicate being prior because its destruction would involve the destruction of "the first": for example, if τὸ διπλάσιον is first of the multiples, the common predicate πολλαπλάσιον cannot be separate because it would be prior to the διπλάσιον. (Zeller supposed τὸ διπλάσιον to be a reference to the indefinite dyad [*Phil. Griech.*, II, 1, p. 684], but it is not so any more than is αὐτοδιπλάσιον in *Metaphysics* 990 B 32 [= 1079 A 28]. The passage of *Eth. Eud.* is either badly mutilated or completely confused, for 1218 A 1-8 should be the basis of an argument against the idea of good [as is *Eth. Nic.* 1096 A 17-19] but no such argument occurs.) This reasoning, which is nowhere expressly ascribed to the Platonists themselves, was apparently suggested by the Platonic argument for the uniqueness of the idea based upon the doctrine that each idea is πρῶτον in respect of the particulars which participate in it (see note 197 *supra* and cf. *Eth. Eud.* 1218 A 3-5 with 1217 B 10-16). It is the argument by means of which the Platonists would show that there can be no other idea of two

in which *the* idea of two and the particular twos participate in common (i. e. the defense against the "third man"; cf. *Metaphysics* 991 A 3-5). Such a defense against the duplication of ideas would not have prevented the assumption of an idea of ἀριθμός on the ground that the idea of two is "the first number," for this designation did not imply that the ideal two was *the* idea of number any more than the designation of the ideal three as "the second number" (cf. *Metaphysics* 1082 B 23, 1081 B 30-31) implied that this three was not *an* idea of number and as much an idea of number as the ideal two. Nor was there any objection merely to the "separation of a common predicate" of things having τὸ πρότερον καὶ ὕστερον, for a separate idea of Unity was posited though unity too was a common predicate of the ideal numbers (cf. *Metaphysics* 1084 B 30, 1085 A 1 [quoted above], and 1084 B 30-32: διὰ δὲ τὸ καθόλου ζητεῖν τὸ κατηγορούμενον ἓν καὶ οὕτως ὡς μέρος [i. e. as formal element, cf. Ross *ad loc.*] ἔλεγον); and the idea of one was called the *first* unit without confusing the Platonists into thinking that it must be "prior" to two and without prejudice to the designation of the ideal two as the first of the series of units which are the ideal numbers (*Metaphysics* 1081 A 29 [ἐπειδή ἐστι πρῶτον μὲν αὐτὸ τὸ ἕν, . .], 1081 B 2-3 [εἴπερ καὶ πρώτη τίς ἐστι μονὰς καὶ ἓν πρῶτον . .], 1081 B 8-9 [οἱ δὲ ποιοῦσι μονάδα μὲν καὶ ἓν πρῶτον . . .]). The very fact that for the Platonists "the first one," "the first two," etc. did not imply a *series* of ones, twos, etc. (*Metaphysics* 1081 B 8-10) whereas "the first number" did imply the second and successive numbers is proof that they did not confuse "first" in the sense of "ideal" with "first" in the sense of first term of a series, and this is confirmed by the designation of the same idea as at once "the first three" and "the second number." Since the idea of number in general would be πρῶτος ἀριθμός in the sense that the idea of unity is first, i. e. not as the first of a series of units but as the principle of all units, the existence of such an idea would not be inconsistent with the fact that two was still considered to be the first of the series of ideas of specific numbers; and the evidence cited above makes it improbable that the Platonists were guilty of the confusion necessary to the rejection on this score of an idea of number in general. From

the most direct statement concerning their denial of such an idea, the passage of *Eth. Nic.*, one would gather that their reason was not so much that two is the first in the series as that *all* numbers have a definite position in the series. Now as soon as the essence of each idea of number is seen to be just its unique position as a term in the ordered series of numbers, it is obvious that the essence of number in general can be nothing but this very arrangement, the whole series of these unique positions. This, however, is identical with the series of ideal numbers itself, for an idea of ἀριθμός apart from this would be merely a duplication of this series of ideas and to such a situation would apply the argument which is based upon the nature of the idea as πρῶτον. Only, the πρῶτος ἀριθμός, to which a separate idea of number would be "prior" and which therefore as "first" prohibits such an idea, is not the idea of two but the idea of number, i. e. the whole series of ideas of number. It is noteworthy that in the sense in which *each* of the ideal numbers is called πρῶτος (cf. *Metaphysics* 1081 A 4-5: ἐν ἑκάστῳ τῷ πρώτῳ ἀριθμῷ) ὁ πρῶτος ἀριθμός is used not of the ideal two but *collectively* of the absolute, i. e. ideal, numbers (1080 B 21-22 τὸν πρῶτον ἀριθμὸν τὸν τῶν εἰδῶν [cf. Ross on 1081 A 4] and cf. *Metaphysics* 1083 B 6-7: τοῖς ὡς εἴδη τὸν ἀριθμὸν λέγουσι [*the* number = the ideal *numbers*]).

Since the conception of τὸ πρότερον καὶ ὕστερον as serial order belonged specifically to the ideas of number of the "original" theory and the denial of a "separate idea of number" was the result of conceiving number as itself the fixed series of these simple units or terms, this doctrine was not merely a special application of a more general principle as Aristotle's statement would seem to imply (*Eth. Nic.* 1096 A 17-19: οὐκ ἐποίουν ἰδέας ἐν οἷς τὸ πρότερον καὶ ὕστερον ἔλεγον, διόπερ οὐδὲ τῶν ἀριθμῶν ἰδέαν κατεσκεύαζον). Similarly unhistorical would be the apparent implication of his remark that ideal numbers cannot be comparable "if there is a first and second number" (*Metaphysics* 1082 B 21-23). The ideal numbers were first conceived as incomparable because they are ideas and were then, because incomparable, seen to differ only as the fixed terms of a series (cf. [Alexander], *Metaph.*, p. 762, 3-5 [on 1082 B 28-32]: εἰ οὖν οἱ ἀριθμοὶ ἰδέαι, αἱ δὲ ἰδέαι οὐ περιέχονται ὑπ' ἄλλων ἰδεῶν ὥστε

μέρος εἶναι τῶν περιεχουσῶν, οὐδ' ἂν οἱ ἀριθμοὶ μέρη εἶεν ἄλλων ἀριθμῶν). The πρότερον καὶ ὕστερον of the ideal numbers is *numerical* order, it was not deduced from a more general notion of "prior and posterior" and was definitely distinguished from ontological priority and posteriority.

It was, however, Aristotle's own doctrine that no generic predicate can be abstracted from species which stand to one another in the relation of πρότερον καὶ ὕστερον (*Politics* 1275 A 34-38; *Metaphysics* 999 A 6-7 [referring not to ideal numbers as Zeller supposed but to Aristotle's own doctrine: cf. Wilson, *op. cit.*, § 7, pp. 255-256 and Robin, *Idées et Nombres*, p. 622]; *De Anima* 414 B 19-33 [cf. Robin, *op. cit.*, pp. 617-618 and 622-624]). This doctrine of Aristotle's is not restricted to any particular kind of "prior and posterior," for, while he recognizes many different senses in which one thing may be called "prior" to another (*Metaphysics* 1018 B 9-1019 A 14, cf *Index Arist.* 652 A 3-54), he reduces all these meanings ultimately to ontological priority (1019 A 11-12). Consequently, with respect to the question of a generic predicate he makes no distinction between the relation of numbers or figures to one another (which for him is that of the inclusion of the "prior" as a part existing potentially in the posterior; cf. *Metaphysics* 1081 B 12-17, *De Anima* 414 B 29-30) and the priority of better to worse (*Metaphysics* 999 A 6-10 and 13-14) or between the relation of figures to one another and that of the lower and higher kinds of soul (*De Anima* 414 B 19-415 A 11), while in this respect identical conclusions are drawn from the priority of substance to the other categories and from the priority of the faultless constitution to those which are perverted (*Eth. Nic.* 1096 A 19-23, *Politics* 1275 A 34-B 2). His assumption that for the Platonists likewise πρῶτον must have been essentially univocal leads to the development of apparent inconsistencies in their doctrine, as when he contends that by positing a πρῶτον ἓν and a πρῶτον δυάς without a series of ones and a series of twos they contradict their own principle according to which the "first" implies the existence of the successive terms of a series (*Metaphysics* 1081 A 37-B 6 and B 8-10) or when, arguing that the unit must be prior to the two, he maintains that it must be the idea of the idea to which it is prior, an argument which

would imply that the ideal two as "prior" to the ideal three ought to be the idea of the latter (*Metaphysics* 1083 B 32-35). The former argument assumes that the ontologically primary must also be the first term in a series, the latter that the prior term in serial order must be the ontological principle of the term posterior to it (cf. the identification of τὸ πρῶτον and ἡ ἀρχή in *Topics* 121 B 8-11). Such passages really show that the Platonists did make a distinction between two kinds of priority which Aristotle does not recognize; not recognizing it, he can take the rejection of a separate idea of number to be tantamount to an admission of the validity of his own general principle and so can contend that the Platonists must admit that wherever there is πρότερον καὶ ὕστερον in *any* sense there cannot be a separate idea. It is for this reason that he represents the Platonic denial of a separate idea of number as a special application of a more general principle and then argues from it that there cannot be an idea of good since the good is predicated in the categories of substance, quality, and relation and substance is naturally prior to relation (*Eth. Nic.* 1096 A 17-23). A similar argument against the theory of ideas is given by Alexander in that section of his commentary on the *Metaphysics* for which he drew upon the περὶ ἰδεῶν, from which writing consequently this argument also may have been taken (Alexander, *Metaph.*, p. 81, 5-7; see *supra* note 135, Appendix II, and note 171 on *Metaph.*, p. 81, 10-22; cf. also *Metaph.*, p. 209, 13 [concerning the Platonic doctrine of τὸ πρότερον καὶ ὕστερον]: ὡς ἱστορεῖ ἔν τε ἄλλοις καὶ ἐν τῷ πρώτῳ τῶν Νικομαχείων ἠθικῶν) After explaining Aristotle's statement that the Platonists ought to posit ideas of negations (see pages 228-229 and 260-272 *supra*), Alexander mentions among the absurdities in which this course would however involve them the fact that there would then be a single idea of τὸ πρῶτον καὶ τὸ δεύτερον: man and animal, for example, are both "not-wood"; but animal is πρῶτον and man δεύτερον, and of such things the Platonists are unwilling to admit ideas. Now, the nature and necessity of negative ideas apart, it is certain that Plato *did* posit single ideas common to entities which stand to each other as animal and man. The ideas of Being and Difference, for example, in which *all* ideas communicate (*Sophist* 259 A-B), are both common to the ideas of

animal and man in exactly the same way that the hypothetical "not-wood" would be μία ἰδέα of both. Moreover, the idea of animal is a single idea in which communicate the "sub-generic" idea πεζόν and the "specific" idea ἄνθρωπος (cf. *Timaeus* 39 E-40 A, 30 C; *Philebus* 15 A), although these two would in Aristotelian language stand to each other in the prior-posterior relation of genus and species. Obviously, then, if those who posited ideas refused to assume a single idea for entities which have τὸ πρότερον καὶ ὕστερον, they could not have included in this term the relationship of genus to species. The serial order of the ideal numbers has no more connection with the relationship of "generic" to "specific" ideas than it has with the relationship of subject to attribute or substance to accident; but in the argument recorded by Alexander, as in that of the *Nicomachean Ethics*, the special meaning of τὸ πρότερον καὶ ὕστερον in the Platonic theory is disregarded and the rejection of a separate idea in the case of ideal numbers is taken to commit the Platonists to the surrender of a separate idea wherever a prior-posterior relationship can be shown, whether or not they themselves recognized this relationship as one of priority and posteriority in *any* sense. A striking example of how the assumed priority of genus to species is used against the theory of ideas is furnished by another argument of Alexander. As has been noticed, he recognizes as a principle of the theory of ideas the axiom that no idea is "prior" to any other (*Metaph.*, p. 87, 8); but, instead of drawing from this the inevitable conclusion that those who posited ideas did not suppose the "generic" idea to be "prior" to the "specific," he inverts the obvious implication of the principle and argues that the assumption of separate ideas of animal and man is inconsistent with the Platonic principle because the idea of animal as genus would be prior to the specific idea of man (*Metaph.*, pp. 105, 6-8 and 110, 17-19), an argument which is analogous to Aristotle's attack upon the substantiality of the ideas as being incompatible with the analysis of species into genus and differentia (see pages 40-48 *supra*, and notice that in the Διαιρέσεις Ἀριστοτέλους [§§ 64 and 65], where ideas are not reckoned with, the genus is "naturally prior" to species "as the unit is to two and the part is to the whole" and ἀριθμός *is* treated as a genus).

APPENDIX VII

Note 292 on Page 377

οὕτω μὲν γὰρ (*scil.* ἐνυπάρχοντα τοῖς μετέχουσιν) ἂν ἴσως αἴτια δόξειεν εἶναι ὡς τὸ λευκὸν μεμιγμένον τῷ λευκῷ, ἀλλ' οὗτος μὲν ὁ λόγος λίαν εὐκίνητος, ὃν Ἀναξαγόρας μὲν πρῶτος Εὔδοξος δ' ὕστερον καὶ ἄλλοι τινὲς ἔλεγον· ῥᾴδιον γὰρ συναγαγεῖν πολλὰ καὶ ἀδύνατα πρὸς τὴν τοιαύτην δόξαν. This is the text of A which is reproduced in M with slight and unimportant variations except for the addition of διαπορῶν as a modifier of Εὔδοξος ἔλεγε.

In his long commentary on this passage Alexander says that Eudoxus and certain others thought that each of the particulars, that is each of the things that have existence relative to the ideas, exists by reason of the mixture of ideas in them (*Metaph.*, p. 97, 17-19 and 28); and he explains the simile by saying that, if the ideas were causes of the being of particulars by having been mixed with them, it would be as if white should be said to be the cause of a white body's being white by reason of having been mixed with that body, the white itself being something capable of independent existence (p. 97, 2-8).

Finally against the theory of Eudoxus he gives ten objections (pp. 97, 29-98, 21), introducing them by saying that the πολλὰ καὶ ἀδύνατα of which Aristotle speaks εἴη ἂν τοιαῦτα. 1) The ideas, if mixed with other things, would be corporeal, for mixture is of bodies. 2) They (i. e. the ideas and particulars, cf. von Fritz, *Philologus*, LXXXII [1927], p 9) would be contrary to each other, for there is mixture only according to contrariety. 3) Either the whole idea or a part of it will be in each of the particulars with which it is mixed; then either the numerically single idea will be in several things or that which partakes of *part* of the idea of man, not of the whole idea, will be a man (p. 98, 4: read τὸ μέρους instead of τὸ μέρος [von Fritz, *op. cit.*, p. 15]). 4) The ideas would then (as a result of the foregoing) be divisible, although they are impassive. 5) If all that have some *part* of an idea are similar to one another (the second alternative of 3 above), the ideas are homogeneous (ὁμοιομερῆ); yet a *part* of man is not man as

a part of gold is gold. 6) In each particular there will be mixed not one but many ideas, for a man is both man and animal and so would partake of both ideas; and the idea of man, in so far as it is also animal, would itself partake of the idea of animal, so that the ideas would be no longer simple but composite and some would be primary, some secondary. 7) If the ideas are mixed with the things relative to them, how could they be any longer "models" as they claim? Models do not cause their likenesses to be like themselves by being mixed with them. 8) The ideas would perish with the destruction of the things in which they are 9) They would not be separate and independent. 10) They would no longer be immobile.

To the last objection Alexander adds: *καὶ ὅσα ἄλλα ἐν τῷ δευτέρῳ Περὶ ἰδεῶν τὴν δόξαν ταύτην ἐξετάζων ἔδειξεν ἄτοπα ἔχουσαν. διὰ τοῦτο γὰρ εἶπε τὸ ῥᾴδιον γὰρ συναγαγεῖν πολλὰ καὶ ἀδύνατα πρὸς τὴν δόξαν ταύτην. ἐκεῖ γὰρ συνῆκται.* This of itself would indicate that he drew his whole list from that work of Aristotle's; but the fact that he begins the 6th objection with the words *ὡς καὶ αὐτὸς ὀλίγον προελθὼν λέγει*, a clear reference to *Metaphysics* 991 A 27-B 1, has induced H. Karpp to contend that at least through this objection Alexander is speaking in his own name, arguing with Aristotelian material which he did not take, however, from *περὶ ἰδεῶν* (*Untersuchungen zur Philosophie des Eudoxos von Knidos*, pp. 29-30). Suspicion as to the integrity of the list might be further strengthened by Alexander's introductory *εἴη ἂν τοιαῦτα* (p 97, 29-30; cf. p. 78, 13-14· *οἷος εἴη ἂν ὁ λέγων* [see Appendix III, page 496 *supra*]) The 10th objection, however, must come from the *περὶ ἰδεῶν* and with it also the 8th and 9th, which rest on the same assumptions as the 10th and criticize not the verbal expression of Eudoxus, the implications of the term *μῖξις*, but his own intention, measuring it by Platonic canons. The 7th Karpp rejects along with the first 6 as Alexander's own formulation of Aristotelian material not used by Aristotle himself against Eudoxus.

Now, *Metaphysics* 991 A 27-B 1 to which Alexander refers at the beginning of the 6th objection (as von Fritz admits, withdrawing his earlier interpretation [*Gnomon*, XI, 1935, p. 414, n. 1]) has the same structure as Alexander's objection and is

used by Aristotle against the Platonic conception of παραδείγματα after he has dismissed Eudoxus' μῖξις. This does not, however, prove that Alexander constructed the 6th objection out of this passage of the *Metaphysics*, for the ὡς καὶ αὐτὸς ὀλίγον προελθὼν λέγει can mean that Alexander found directed against Eudoxus in the περὶ ἰδεῶν substantially the same argument that was later used against Plato in that work, in which second form alone it was kept in the *Metaphysics* where all the arguments against Eudoxus were omitted; that is, the καί may modify the whole clause ("as he himself says a little later also") instead of αὐτός alone ("as he himself too says"), in which case its purpose is not, as Karpp says, "die Übereinstimmung mit Aristoteles ausdrücklich festzustellen" but to point out that what now in the *Metaphysics* is an argument against Plato was elsewhere used against Eudoxus also (cf. Alexander's reference to the "third man" argument [*Metaph.*, p. 85, 11-12, see page 233 *supra*]) This seems to be the more reasonable interpretation, moreover, for otherwise Alexander would be calling attention to the fact that he himself has transformed into an objection to Eudoxus an argument that Aristotle uses only against Plato. Our knowledge of Aristotle's method of argument would not justify the contention that he refrained from using in the same book two adaptations of the same refutation against two different, especially two related, theories; and the 6th objection given by Alexander opposes the special form of Eudoxus' theory quite as aptly as does the passage in the *Metaphysics* that of Plato. The second part of the latter, for example, purports to show that Plato's "models" must themselves be "copies"; the corresponding part of the former that, whereas Eudoxus said that the ideas are mixed with sensible objects, these ideas would in fact have to be mixed with one another also. The implications, which Alexander has expressed against Eudoxus, that the ideas must then be complex and not simple and that among them some would be primary and others secondary, these do not appear in the *Metaphysics* passage against Plato; and Karpp (*op. cit.*, p. 33) thinks this addition a significant indication that the 6th objection is Alexander's own, saying that the distinction between primary and secondary

ideas was suggested to him by Aristotle's distinction between primary and secondary substance. It is, in fact, evidence of the contrary, for Karpp is mistaken in supposing that by primary idea Alexander means "man" and by secondary idea "animal" (which, to be sure, he would have to mean, were Karpp's explanation of the origin of this "addition" correct). In his commentary on *Metaphysics* 991 A 27-B 1 Alexander repeats against the Platonic theory this "addition" to the 6th objection against Eudoxus (*Metaph.*, p 105, 5-9 and 19-23), and here it is made clear that by primary idea he means "animal" and by secondary idea "man" (*Metaph.*, p. 105, 7-8; cf. p. 110, 17-19); furthermore, as has already been seen from his commentary on *Metaphysics* 990 B 13, the attempt to establish such a relationship of prior and posterior among the ideas was most probably used as an argument against the general theory even in the first book of περὶ ἰδεῶν (*Metaph.*, p 81, 5-7 [cf. p. 209, 13· ἐν ἄλλοις]; see Appendix VI [pages 523-524 *supra*]). There is, therefore, no cogent reason to suppose that the 6th objection does not come from the περὶ ἰδεῶν or that Alexander means to say that thus far the list is his own. The same can be said of the 7th which, according to Karpp (*op. cit.*, pp. 33-34), must be Alexander's own because it presupposes the criticism of the ideas as παραδείγματα, whereas Aristotle does not begin this critique until *Metaphysics* 991 A 20 *after* the theory of Eudoxus has been dismissed. Alexander's objection does not, however, presuppose a *criticism* of paradeigmatism nor does it assume that Eudoxus meant to explain how the ideas *as models* are causes of particulars; its point is simply that Eudoxus' theory is in fact irreconcilable with the nature of the ideas as stated by the Platonists who say that they are "models" (παραδείγματα ὡς λέγουσιν [*scil.* οἱ Πλατωνικοί]), and in this respect the 7th objection is of the same kind as the last three, all four attacking Eudoxus' "mixture" as incompatible with the Platonic conception of ideas. At most the 7th presupposes a *statement* that the ideas were for the Platonists "models"; and references to that conception certainly occurred in the first book of περὶ ἰδεῶν (cf Alexander, *Metaph.*, p 79, 3-8 [pages 226-227 *supra*], pp. 82, 11-83, 17 [pages 230-232 and 275-279 *supra*]).

Even though the reference at the beginning of the 6th objection is, as we have seen, no justification for assigning the first five to Alexander rather than to Aristotle, there remain to be considered Karpp's further arguments in favor of this ascription. These first five, he maintains (*op. cit.*, p. 31), attack the conception of μῖξις from the point of view of Aristotle's theory of that notion and do not proceed against Eudoxus, as do the last three objections, from Platonic assumptions. Furthermore, the first two objections, Karpp contends (*op. cit.*, p. 32), presuppose the schematization found in Alexander's *De Mixtione*, the reduction of Aristotle's doctrine of μῖξις to the formulaic catch-words σώματα and ἐναντίωσις; and, since the 3rd, 4th, and 5th objections can be urged against the Platonic μέθεξις as well as against the μῖξις of Eudoxus, he asserts (*op. cit.*, pp. 32-33) that Aristotle in order to use them against the former would have refrained from bringing them against the latter. Now, in the first place it is probable that the πολλὰ καὶ ἀδύνατα which Aristotle brought against Eudoxus' theory in the περὶ ἰδεῶν were not all of one kind, and it is certain that among them there were arguments to show the fallacy of Eudoxus' conception of μῖξις as such and in respect of what Aristotle considers its similarity to that of Anaxagoras. So much the *Metaphysics* itself implies in ascribing the easily refutable λόγος to Anaxagoras and Eudoxus indifferently (991 A 16-19), a connection which Aristotle must have made in the περὶ ἰδεῶν also, in which work, however, there would have been no special consideration or refutation of Anaxagoras In accord with this is the fact that Alexander (*Metaph.*, p. 97, 21-27), before taking up the refutation of Eudoxus, refers for Aristotle's rebuttal of Anaxagoras to the first book of the *Physics* (i. e. 187 A 26-188 A 18). If, however, the first two objections in Alexander's list against Eudoxus do not come from the περὶ ἰδεῶν, no arguments based specifically upon the nature of mixture and applicable to the common feature in the theories of Anaxagoras and Eudoxus are reported from that work; and we should have to suppose that Alexander deliberately omitted what arguments of that kind there were in the περὶ ἰδεῶν in order to substitute for them these first two objections of his own. Nor

do Karpp's specific objections to the arguments in question justify the adoption of such an improbable theory. Certainly Alexander's list is a compressed outline and not a verbal quotation of Aristotle's arguments (for a test of Alexander as a reporter of Aristotle cf. von Fritz, *Philologus*, LXXXII [1927], pp. 2-6). In maintaining, however, that the "catch-word formulation" of the 1st and 2nd objections presupposes the systematization of Aristotelian doctrine by Alexander as found in his *De Mixtione* (chap. XIII ff.), Karpp overlooks the fact that the argument represented by the 1st objection is elsewhere put by Aristotle in stenographic form against a possible explanation of the derivation of numbers from their principles (*Metaphysics* 1092 A 24-25: πότερον μίξει, ἀλλ' οὔτε πᾶν μικτόν [cf. *De Generatione* 327 B 20-22]) and that even the "catch-word formulation" is implied by a passage of Aristotle's *Topics* (149 B 1-3: ἀδύνατον γὰρ τὸ ἀσώματον σώματι μεμίχθαι, ὥστ' οὐκ ἂν εἴη χρῶμα πυρὶ μεμιγμένον); and he unreasonably chooses to take the formulation of the *De Mixtione* as the basis of the 2nd objection, although Alexander's distinction of μῖξις and κρᾶσις (*De Mixtione*, p. 228, 27-229, 18) is neglected in this argument, the formula of which fits exactly *De Generatione* 328 A 31-32 (cf. von Fritz, *Gnomon*, XI [1935], p. 414). The passage of the *De Mixtione* (p. 228, 15-21), in which the denial of a mixture of εἴδη with things and the rejection of Anaxagoras' mixture are mentioned in the same context, is no closer to the *Metaphysics* passage or the first two objections of Alexander than is *De Generatione* 327 B 13-22, which has both of the elements stressed by Karpp in the *De Mixtione* (n. b. 327 B 14-15: οὔτε τὸ σχῆμα τῷ κηρῷ μιγνύμενον [cf. Philoponus, *De Gen.*, p. 190, 18-21] and 327 B 19-22: the refutation of Anaxagoras) and in addition expressly denies the mixture of λευκόν and σῶμα (327 B 15-17).

Among the next three objections (3-5), of which the 4th and 5th are really further difficulties drawn from the second alternative of the 3rd, the 4th at any rate, like the 7th through the 10th, criticizes Eudoxus' theory as irreconcilable with the nature of Platonic ideas (οὐσαι ἀπαθεῖς [cf. von Fritz, *Gnomon*, XI, p. 414]). That these objections could from Aristotle's

point of view be brought against μέθεξις (*Metaphysics* 1039 B 16-17 probably refers to such arguments against participation; cf. 1039 A 33-B 2 and with it Plato's *Parmenides* 131 B 1-2) is no reason why they could not in the περὶ ἰδεῶν have been used against Eudoxus' μῖξις as well. Nor is Aristotle's use of them in this way rendered less probable by the fact that Plato himself put the objections into the mouth of Parmenides (*Parmenides* 131 A-B = 1st alternative of 3rd objection; 131 C = 2nd alternative of 3rd and the 4th objection; 131 D implies the 5th objection: fractional participation would result in a thing's being large by partaking of a *small* part of largeness [*Parmenides*] = fractional mixture would require homogeneous ideas [5th objection; for Aristotle's use of the term ὁμοιομερές against the Platonists cf. *Metaphysics* 992 A 6-7, and for its connection with μῖξις cf. *De Generatione* 328 A 10-12]); the "third man" argument too occurs in the *Parmenides* and is repeated from the περὶ ἰδεῶν in this chapter of the *Metaphysics* (990 B 17). Aristotle is more likely than Alexander to have developed the 5th objection out of the implications of *Parmenides* 131 D (a relationship missed, so far as I know, by critics from Siebeck to Karpp and Philippson, who have seen the likeness of the 3rd and 4th to *Parmenides* 131 A-C); and the exact correspondence with *Parmenides* 131 A-D of objections 3-5 of this list is more reasonably explained by their existence in the περὶ ἰδεῶν than by supposing that Alexander intruded them here into the midst of objections taken from that work.

There is, then, no reason to doubt that the whole list comes from the περὶ ἰδεῶν, from which work, however, it gives the arguments only in the incomplete and compressed form of an abstract. These arguments fall into four divisions (I = 1 and 2, II = 3-5, III = 6, IV = 7-10) of which I contends that "mixture" of the ideas with other things would require that the ideas be corporeal, that ideas and particulars belong to a single γένος (with the possible implication that particulars would then react upon the ideas [cf with *De Generatione* 328 A 31-33, the formulation presupposed by the 2nd objection, *De Generatione* 323 B 33-324 A 3]), II that it must destroy

either the uniqueness or the impassivity and indivisible character of the ideas, III that mixture of a single idea can account for no specific character of a particular and that specific ideas must be composite (i. e. that there must be mixture not only of ideas with particulars but of ideas with ideas), IV that mixture of ideas with particulars contradicts the Platonic conception of ideas as imperishable, independent, immobile "models" of particulars. For these objections to have any cogency Aristotle must have supposed 1) that Eudoxus assumed ideas which are incorporeal, unique, impassive, and indivisible entities, 2) that he said nothing about a mixture of these entities with one another, considering each to be "simple," but to the "mixture" of each with particulars attributed the existence of multiple particulars of each character, and 3) that he did not explain how such a "mixture of ideas with things" could be reconciled with the Platonic conception of "separate" ideas. Accordingly, it would seem that Eudoxus had said nothing about the nature of ideas as such but had merely explained their relation to particulars as being one of immanence and had thereby made of the ideas a self-contradictory conception, either unconsciously or at least without express recognition of the consequences and commensurate alteration of the theory to avoid them. It seems more than likely, then, that Aristotle has in mind the theory of Eudoxus and this self-contradiction where he remarks that, since those who posit ideas believe them to be immobile and intelligible, the ideas, if one were to say that they exist in us, would be at once in motion and immobile, sensible and intelligible (*Topics* 113 A 24-32, see pages 9-10 *supra*). That they would be sensible because "the form in each thing is known to us by means of sight" indicates that he is thinking not of the theory which would make the ideas thoughts in the mind (*Parmenides* 132 B-C, cf. *De Anima* 429 A 27-28) but of ideas as immanent characters of particulars (cf. Alexander, *Topics*, p. 189, 10-12). This would, then, be another objection of the kind represented by the last four in Alexander's list.

An attempt to give a more subtle significance to Eudoxus' theory has been made by Oskar Becker (*Quellen und Studien*

zur Geschichte der Mathematik, Abt. B, III [1936], pp. 389-410). Assuming that the comparison ὡς τὸ λευκὸν μεμιγμένον τῷ λευκῷ (*Metaphysics* 991 A 15-16) was "obviously used by Eudoxus himself to explain and establish his thesis" (*op. cit.*, p. 390), Becker contends that the text is impossible, alters it to ὡς τὸ λευκὸν μεμιγμένῳ τῷ λευκῷ (*scil.* αἴτιόν ἐστιν), and so supposes Eudoxus to have meant that the ideas are related to sensibles as the pure colors (which are never directly visible) are to the mixed colors, which alone are visible and which are, as it were, indications to the mind of the pure colors, the presence of which in the mixed colors are the causes of their existence (*op. cit.*, pp 392-3, 406). Becker's alteration of the text of the *Metaphysics* is, however, indefensible. The form μεμιγμένον stands without variant in both A and M, and the passage was so read by Alexander (*Metaph.*, p 97, 2-12), as Becker himself admits Furthermore, if the ten objections do come from the περὶ ἰδεῶν (and Becker seems to admit that they do [*op. cit.*, p. 390, n. 4 and n. 5]), Aristotle in that work certainly assumed that Eudoxus by his "mixture" meant *not* the sensible phenomenon in contrast to the "pure idea" immanent in it but the "*mixture of ideas with sensibles*" (cf [in the list of objections] Alexander, *Metaph.*, pp. 97, 30 [εἰ μίγνυται αἱ ἰδέαι τοῖς ἄλλοις]; 98, 2-3, 10, 16-19); in the last of these passages οὐδὲ γὰρ οὕτως τὰ παραδείγματα ταῖς εἰκόσι . . . αἴτια τῷ μεμῖχθαι shows that Aristotle assumed as the statement of Eudoxus' position τὰ εἴδη τοῖς ἄλλοις αἴτια τῷ μεμῖχθαι, which is exactly Alexander's interpretation of the *Metaphysics* passage in question (*Metaph.*, p 97, 2-10) Becker is therefore mistaken when he says that Alexander's interpretation is his own and not the authentic opinion of Aristotle in the περὶ ἰδεῶν,—a statement improbable in any event, if we suppose that the comparison of the *Metaphysics* stood in the περὶ ἰδεῶν which Alexander had before him. Finally, if the suggested alteration and interpretation of the text were correct, Aristotle would be ascribing this theory not only to Eudoxus but to Anaxagoras as well and primarily to him In short, Becker has failed to observe that the text of the *Metaphysics*, far from justifying his assumption that the comparison was used by Eudoxus himself, implies the contrary;

it is *after* having said that by being immanent in the participants the ideas might seem to be causes ὡς τὸ λευκὸν . . τῷ λευκῷ that Aristotle proceeds οὗτος ὁ λόγος . . . ὃν Ἀναξαγόρας μὲν πρῶτος, Εὔδοξος δ' ὕστερον καὶ ἄλλοι τινὲς ἔλεγον. The example, then, cannot be ascribed to Eudoxus any more than to Anaxagoras; and Alexander's treatment shows that he took it as enounced by Aristotle himself and meant to be applicable in common to Anaxagoras and Eudoxus (*Metaph.*, pp. 96, 39-97, 10: λέγει [*scil.* Aristotle] πῶς τὰ μεμιγμένα ἔν τισιν αἴτια . . . , then the explanation of the example, *thereafter:* ὥστε καὶ αἱ ἰδέαι . . . without further mention of the example; *then* [p. 97, 12-19] καὶ παρατίθεταί γε τίνων ἦν δόξα . . . with Anaxagoras first and then Eudoxus but without reference to the example in either case). *Physics* 187 B 4-7 and 188 A 7-9 (cf. *De Generatione* 327 B 15-17) will show, if that be necessary, that the case of "white" could stand for Aristotle as an example of Anaxagoras' doctrine of μῖξις. It may be added that there is no justification for assuming, as Becker does, that *Philebus* 53 A-C refers to Eudoxus because the difference between pure and mixed pleasure is there explained by means of the difference between pure and mixed color; a similar comparison is used in the *Republic* (586 B, cf. 583 B and 585 A with Adam's note *ad loc.*).

There is, then, no foundation for Becker's conjecture concerning the meaning of Eudoxus' theory or for his supposition that it was put forward as a conscious adaptation of Anaxagorean conceptions. The identification of Eudoxus' notion and the theory of Anaxagoras is due to Aristotle himself, in whose treatment of other thinkers this is a frequent procedure (cf. e.g. *De Gen. Animal.* 723 A 6-7, *De Caelo* 303 A 8-10; see pages 141-145 *supra*); and what he regarded as the common factor in the two he himself says: in both the existence of particulars is accounted for by means of immanent characters and this immanence is explained as μῖξις. There is no indication that he tried to find in Eudoxus' theory as he does in that of Anaxagoras an inarticulate groping for his own doctrines of inseparable qualities (*Physics* 188 A 5-6) and of matter as the indeterminate potentiality of all formal determinateness

(*Metaphysics* 989 B 16-21, cf. 1069 B 18-24 and 1007 B 25-29); he could not have deduced them in the same way, at any rate, for Eudoxus as he does for Anaxagoras, since the first is inferred from the denial of any complete segregation and the second from the assertion of a complete mixture of all things (*Metaphysics* 989 B 6-14), whereas the ὁμοῦ πάντα of Anaxagoras was certainly not involved in the theory of Eudoxus (cf. the 6th objection, Alexander, *Metaph.*, p. 98, 10-11) The two theories differed further in that the "seeds" of Anaxagoras' mixture were corporeal and each particular thing was just the preponderance of one kind of "seed" in a mixture containing all kinds, whereas for Eudoxus each particular existed by reason of an unique and simple incorporeal entity which is "mixed" with it or "pervades" it. So even the aspect of "immanence" is quite different in the two conceptions, for, while according to the latter the idea "mixed with" the particular is in no sense identical with it, in the former case the particular is identical with the mixture of the "seeds" and its cause can be said to be "in" it only in the sense that the predominant mass is not the whole of the mixture. Considering the wide difference between the two conceptions and the fact that Aristotle by starting from his own notion of μῖξις misinterprets the nature of Anaxagoras' theory (cf. *Crit. Pres. Phil.*, pp. 50-52, 141-143, 236-237), one might suspect that the entire attack on Eudoxus is based upon a misinterpretation of the ambiguous term μῖξις, by which Eudoxus himself meant to imply none of the consequences which Aristotle draws from it. After all, Plato too speaks of the "mixture" of πέρας and ἄπειρον (*Philebus* 23 C-D, 27 B); and even Aristotle, in spite of his own doctrine, allows himself the expression, "the mixture of form with matter" (cf. *De Caelo* 277 B 32-33, 278 A 14-15). Now, it may be granted that Eudoxus did not use "mixture" in Aristotle's sense of the word and that therefore the first two objections are not valid. Nevertheless, if *Topics* 113 A 24-32 is, as it seems to be, a reference to the opinion of Eudoxus (see page 532 *supra*), the question no longer depends entirely upon the significance given the term μῖξις, for here without reference to that term is evidence that

Eudoxus believed the ideas to be localized in particulars. Moreover, the fact that certain of the objections from the περὶ ἰδεῶν appear in Plato's *Parmenides* also (131 A-D, see page 531 *supra*) suggests that the theory of Eudoxus is the object of Plato's criticism in that section. At any rate, it is a conception of ideas as immanent that is there attacked (cf. 131 A 8-9 [τὸ εἶδος ἐν ἑκάστῳ εἶναι τῶν πολλῶν], 131 B 1-2, 131 C 6-7), so that there must have been such a notion current, and we have no reason to doubt Aristotle's ascription of it to Eudoxus. That Plato in attacking it says nothing of μῖξις probably indicates only that he attached no special importance to Eudoxus' use of this term but, considering the important aspect of his theory the *immanence* of the ideas, desired to oppose this conception as such. Indeed, Eudoxus may have had no reason for using the term μῖξις beyond the word's general meaning of "close connection" or "combination," which enabled even Aristotle to use it loosely to express the relation of form to matter; but it is possible that he chose it purposely as appropriately expressing immanence just because Plato had used ἄμεικτον as an epithet of the transcendent ideas (cf. *Symposium* 211 E).

Equally given over to conjecture is his reason for making the ideas immanent in particulars. It is possible that he thought of mathematical objects as immanent and so came to believe that the Platonic ideas must also have this kind of existence (cf Karpp, *op. cit.*, p. 41, n. 23; for the school of Eudoxus distinguished from Plato and his followers in regard to their attitude toward mathematical existence cf. Plutarch, *Quaest. Conviv.* 718 E-F [from the Πλατωνικός of Eratosthenes] and Proclus, *In Euclidem*, pp. 77, 15-78, 13 [Friedlein]); but, however plausible this conjecture may be, it is without support of evidence (*Metaphysics* 998 A 7-19 is not supporting evidence, as Karpp thinks [*loc. cit.*] with Becker's approval [*op. cit.*, p. 407]. There Aristotle argues against the doctrine that the mathematicals are immanent though the ideas are separate, a combination which, he says, is inconsistent. This immanence of mathematicals is again referred to at 1076 A 38-B 4; but this is not the view ascribed to the Pythagoreans at 1090 A 20-23 as Karpp, following Ross on 998 A 7, mistakenly asserts.

Metaphysics 1080 A 37-B 3 expressly distinguishes them from each other, as Ross himself says in his note on 1076 A 33 Nor does Aristotle in any way connect the doctrine of immanent mathematicals with Eudoxus' theory of immanent ideas; and Alexander's reference in his commentary here [*Metaph.*, p. 201, 18-20] to the passage on Eudoxus in Book A is no evidence for any historical connection, since in the same sentence he refers to 1090 A 20-23 which, as has been seen, is differentiated from this theory by Aristotle himself. Karpp is, on the other hand, right in pointing out [*loc. cit.*] that Aristotle's connection of Eudoxus' theory with that of Anaxagoras shows that Eudoxus did not make his immanent ideas mathematical entities of any kind.)

That the "mixture" of ideas with particulars was suggested to Eudoxus by Plato's *Sophist* where this term is used for the intercommunication of ideas (Ueberweg-Praechter, *Grundriss der Geschichte der Philosophie*, I[12] [1926], p. 346) is an impossible conjecture, if the *Parmenides*, being earlier than the *Sophist* (as it is according to Ueberweg-Praechter, *op. cit.*, p. 218), itself refers to Eudoxus' theory as we have seen reason to believe that it does; moreover, the 6th objection from the περὶ ἰδεῶν presumes that Eudoxus took no account of a "mixture" of ideas with one another. Consideration of the *Sophist* in connection with Eudoxus' theory is, however, indicative of two important facts. If Plato, *after* having objected to the implications of Eudoxus' "mixture" of ideas with particulars, could himself employ μῖξις as well as other terms to designate the intercommunication of ideas (see note 218 *supra*), he could have attached no special significance to that particular *terminology* either in Eudoxus' theory or in his own, a fact which is further substantiated by the terminology of the *Philebus* referred to above. In the second place, since the intercommunication of ideas is assumed in the *Republic* (476 A) and the *Phaedo* (103 C-105 B; see note 128 *supra*), Eudoxus' failure to say anything about the "mixture" of ideas with one another does not indicate that that doctrine was unknown in the Academy when he made his suggestion, which no one is likely to date earlier than the *Phaedo* (cf. e g von Fritz,

Philologus, LXXXII [1927], p 19; Becker, *op. cit.*, pp. 397-8; Philippson, *Riv. di Filologia*, LXIV [1936], p. 124); it shows rather that he propounded no comprehensive theory of ideas but simply treated in an isolated fashion one problem of the Platonic theory without further consideration of its other aspects. The reference to intercommunication of ideas in the *Republic* and *Phaedo* is also fatal to Philippson's reconstruction (the exact contrary of that proposed by Ueberweg-Praechter), according to which it was Eudoxus' theory and Aristotle's criticism of it in the περὶ ἰδεῶν that induced Plato to adopt the "mixture of the ideas" in the *Sophist*, a mixture, however, not with particulars but with one another (*Riv. di Filologia*, LXIV [1936], pp. 114-115). Equally impossible is Philippson's supposition that the argument in the περὶ ἰδεῶν, to the effect that Eudoxus' μίξις is incompatible with the immobility and impassivity of the ideas, caused Plato in the *Sophist* to correct his former doctrine and deny that the ideas are ἀπαθεῖς and ἀκίνητοι (*op. cit.*, p. 114). These considerations Philippson presents as proof of his thesis that Aristotle did not know the *Sophist* when he wrote the περὶ ἰδεῶν and that therefore the περὶ ἰδεῶν is earlier than the *Parmenides* in which dialogue Plato refers directly to this work of Aristotle's (*op. cit.*, especially pp. 122 and 125; see also notes 145 and 173 and page 292 *supra*). It is not necessary to discuss here the meaning of *Sophist* 248 A-249 D (see pages 437-439 *supra*) which Philippson thinks contains Plato's correction of his earlier doctrine, for Plato continued thereafter to assert that the ideas are immobile (*Timaeus* 27 D-28 A, 37 D-38 C, 52 A; *Philebus* 59 A-C, 61 D-E); but, what is decisive for the present question, Aristotle in other passages which were certainly written later than Plato's *Sophist* assumes that the ideas are immobile (e. g *Metaphysics* 1069 A 33-36 and see note 291 *supra*), so that this characterization of them in the περὶ ἰδεῶν does not imply the chronological priority of that work to the *Sophist* or any influence upon its content of Eudoxus' theory or of Aristotle's criticism. Invalid also are the historical reconstructions which assume that when Eudoxus proposed his theory Plato had not yet employed the term παράδειγμα to indicate his conception of the relation of the separate ideas to particulars (von Fritz,

Philologus, LXXXII [1927], p 20; Becker, *op. cit.*, pp. 399-400). The 7th objection from the περὶ ἰδεῶν should in strictness imply the contrary, namely that this was the common Platonic conception before Eudoxus' theory was proposed (Alexander, *Metaph.*, p. 98, 17: . . . πῶς ἂν ἔτι εἶεν παραδείγματα, ὡς λέγουσιν;). One need not rest the case on this implication, however, for, contrary to the assumption on which the conjectures in question are based, Plato *did* apply to the ideas the term παράδειγμα in dialogues earlier than the *Parmenides*. He did so even in the *Euthyphro* (6 D-E), a passage which, compared with *Phaedo* 74 A-75 D (where the word itself does not appear; but see note 186 *supra*), shows that the conception must have been familiar in the Academy from the first (cf. also *Republic* 472 B-D, 500 E [cf. 501 B], 540 A, 592 B). It could hardly have been through ignorance or misunderstanding of Plato's intention, then, that Eudoxus proposed to make the ideas immanent in particulars. As has been seen, his very terminology may have been meant to emphasize his repudiation of transcendence. At any rate, it was just in the "separation" that he found difficulty (διαπορῶν, *Metaphysics* 1079 B 21), and it was to eliminate this difficulty that he proposed his solution, apparently orally (cf. von Fritz, *Philologus*, LXXXII [1927], p. 19; cf. Philippson, *Hermes*, LX [1925], p. 449) and without further alteration of Plato's theory (Karpp's further construction [*op. cit.*, pp. 39-41] for Eudoxus of a theory of immanent νοῦς which actualizes itself as the immanent idea is not only unsupported fancy, as he himself half admits, but assumes a real connection between Eudoxus' theory and that of Anaxagoras which after the above discussion there is no reason to believe existed and which Karpp himself had previously called an invention of Aristotle's [*op. cit.*, p. 38, n. 17].) The result, as Ross says (*Metaphysics*, I, p. 198), would have been not very different from Aristotle's own theory of immanent forms (cf. also De Vogel, *Een Keerpunt in Plato's Denken*, pp. 224-227), an observation which is curiously substantiated by the fact that, the question of literal μίξις aside, many of the inconsistencies with which Aristotle taxes Eudoxus' "immanent ideas" are stumbling-blocks for his own theory (e. g. the intelligibility, unity, eternity, immobility of immanent forms).

APPENDIX VIII

Note 319 on Page 395

In *De Caelo* 284 A 18-35 it is the effort involved in moving the heaven incessantly and otherwise than in the natural motion of that body that Aristotle says would make the life of the soul laborious and therefore not blessed. Such activity, he says, without even the respite (ἀνάπαυσις) of sleep vouchsafed mortal animals, would be ἀπηλλαγμένη ῥαστώνης ἔμφρονος, with which remark he seems to aim at the ἄπαυστος καὶ ἔμφρων βίος of *Timaeus* 36 E just as his comparison of the lot of such a soul with the lot of Ixion was apparently suggested by Plato's vivid description of the soul stretched out around the body of the universe (*Timaeus* 34 B and 36 E; cf. Simplicius, *De Caelo*, pp. 376, 29-377, 2). In thus rejecting here the notion that the heaven is preserved by a constraining soul, Aristotle interprets the Platonic world-soul as a force which like the δίνησις of Empedocles or the Atlas of mythology prevents the heavenly bodies from following their own impulse (cf. *Metaphysics* 1023 A 17-21); and so, when at the beginning of this passage he identifies the motivation of the myth of Atlas with that of later theories, the positing of an animate constraint (ἀνάγκη ἔμψυχος) for the heaven, he is in effect turning against Plato the latter's own words in *Phaedo* 99 C where those who give mechanical explanations for the earth's support are said to believe that they can find a more powerful Atlas than the teleological explanation which they think has no "force" It may be that Aristotle had in mind at the same time that mythical Ἀνάγκη who in the *Republic* (617 B) supports on her knees the spindle of the universe and who by some members of the Academy was interpreted as ἡ ψυχῆς ἀνάγκη which governs the motions of the heavenly bodies (cf. the *Epinomis* 982 B-C, shown to be an interpretation of *Republic* 616 C and 617 B-C by the use of ἀδάμας and ὄντως τρεῖς Μοῖραι . . .).

Jaeger (*Aristoteles*, pp. 320-324) argued that this passage of the *De Caelo* along with the whole chapter in which it occurs

was taken by Aristotle from the third book of his περὶ φιλοσοφίας (cf. also Walzer, *Aristotelis Dialogorum Fragmenta*, pp. 95 f.); others have denied the possibility of this on the ground that, whereas in the περὶ φιλοσοφίας the heavenly bodies are said to be animate (*frags.* 23 and 24 [Cicero, *De Natura Deorum*, II, 15, 42 and 44]; Jaeger, *Aristoteles*, pp. 145-158), this passage of the *De Caelo* is a sharp refutation of that conception (Bignone, *L'Aristotele Perduto*, II, p. 355, n. 2; Guthrie, *Class. Quart.*, XXVII [1933], pp. 166 and 169; *idem*, *Aristotle On the Heavens* [L. C. L.], pp. 134, n. *b* and xxxi f.). Yet in the very next chapter of the *De Caelo* (284 B 6-285 B 34) the six absolute directions are assigned to the οὐρανός because it is ἔμψυχος καὶ ἔχει κινήσεως ἀρχήν (cf. 284 B 30-33, 285 A 27-31). This chapter, though openly directed against the Pythagoreans, was almost certainly intended to be understood at the same time (cf. Themistius, *De Caelo*, p. 95, 21-23) as a criticism of Plato (cf 285 A 31-32 [οὐ δεῖ γὰρ ἀπορεῖν διὰ τὸ σφαιροειδὲς εἶναι τὸ σχῆμα τοῦ παντός . . .] with the basis of the argument in *Timaeus* 62 C-63 E [τοῦ γὰρ παντὸς οὐρανοῦ σφαιροειδοῦς ὄντος . . .], and with 285 A 33 [ὁμοίων γ' ὄντων τῶν μορίων] cf. *De Caelo* 308 A 17-29 [page 162 *supra*]) who, since he considered the universe a complete living organism, must have seemed to Aristotle all the less justified in denying it absolute directions. Since both here and elsewhere in this book Aristotle treats the heavenly bodies as animate (cf. especially 292 A 18-21, 292 B 1-2, 292 B 28-30), it has been urged that in 284 A 18-35 he is arguing not against soul as the cause of their motion but only against the notion of a soul which constrains them to an unnatural motion (Ross, *Physics*, pp. 97-98); and Simplicius (*De Caelo*, pp. 378, 29-379, 17) held that the passage is only a warning against taking the action of the soul on the heaven to be one of mechanical propulsion and that, since Plato did not conceive the motion of the heaven to be enforced and unnatural in this sense, it is not really a criticism of Plato at all.

Whether or not Aristotle at this time connected the "natural movement" of the heaven with the activity of a soul, from his point of view the action of the Platonic world-soul would have to be an unnatural constraint upon the heavenly bodies, since

they according to Plato consist "chiefly of fire" (*Timaeus* 40 A, which implies an admixture of earth, air, and water also [cf. Aëtius, II, 13, 12 = *Dox. Graeci*, p. 342; Proclus, *In Timaeum* 274 A-B; pseudo-Platonic *Epinomis* 981 D-E]). At the beginning of the *De Caelo* (269 B 2-17) Aristotle had argued that, as the rotation of the heavens, being continuous and eternal, cannot be unnatural, so the material of this motion cannot be fire, the natural motion of which is in a straight line from the center, but must be a simple body to which circular motion is natural and which is therefore different from the four of our environment; this enables him to assert that the heaven is not troubled by any such forcible constraint as would be required to keep it from the motion which, according to his own theory of the four simple bodies, would be natural to it if it consisted of any of them (284 A 14-16). The stars themselves also consist of this fifth body, he says, heat and light being the result not of any fiery nature of these bodies but of the friction which their motion causes in the air beneath them; his reason for assuming this constitution of the stars agrees, he claims, with the reasoning of those who held them to be fiery, namely that each thing consists of the material of its environment (289 A 11-35; cf. the use of this principle against a biological theory of Empedocles, *Parva Naturalia* 477 A 25-31, 477 B 23-478 A 7 [cf. *De Gen. Animal.* 761 B 13-23]). Simplicius (*De Caelo*, p. 435, 31-32) plausibly suggests that Aristotle has reversed the reasoning of those who held the heaven to be fiery; it could not, at any rate, have been that of the Presocratics (cf. *Crit. Pres. Phil.*, p. 184, n 171), and the reason given by Plato for the constitution of the heavenly bodies is simply ὅπως ὅτι λαμπρότατον ἰδεῖν τε κάλλιστον εἴη (*Timaeus* 40 A).

Agreeing with Plato that the stars are spherical (cf. *Timaeus* 40 A), a shape consistent with the theory that their material is the fifth simple body and so, presumably, inconsistent with the material assigned to them by Plato (*De Caelo* 290 A 7-9), Aristotle makes this shape itself an argument against their free motion and in support of his own thesis that embedded in the circles of the heaven they move as parts of a moving whole. Having argued that this hypothesis alone affords a reasonable

explanation of the fact that the speed of all the heavenly bodies varies directly with the magnitude of the circles in which they move (289 B 7-290 A 7, cf. *Crit. Pres. Phil.*, p. 185), Aristotle next contends that, whereas if the stars were to move of themselves they must either rotate or roll, these being the two motions proper to a sphere, they do neither. If they had only axial rotation, they would not change their position as they clearly do; and the fact that the moon always displays the same side shows that they do not roll, since what rolls must turn about (290 A 7-29). In *Timaeus* 40 A-B just after having mentioned the spherical shape of the heavenly bodies Plato assigns each of them two motions, axial rotation and forward motion under the influence of the "revolution of the Same." The combination of these two motions would explain how the moon, moving freely, keeps the same side turned toward the earth by rotating once during each revolution; but Aristotle's point is that this would not be the proper translational motion of a sphere, which should rather move from place to place as a wheel does, turning about once in the distance equal to its circumference (cf. Heath, *Aristarchus of Samos*, p. 235). In explaining away as an optical illusion the apparent rotation of the sun at rising and setting and the twinkling of the fixed stars (290 A 13-24) Aristotle seems to imply that these phenomena gave rise to the theory of rotation; to this the Platonist Atticus rightly objects that Plato's reason for assigning this motion to them was rather that as animate they must have their own motion which must be the fairest since they are divine (Baudry, *Atticos*, pp. 22-23 = Eusebius, *Praep. Ev.* XV, 8, 5; cf. Proclus, *In Timaeum* 275 F-276 A [on *Timaeus* 40 A-B]). Plato had, moreover, spoken of rotation upon itself as the motion proper to the spherical shape of the universe, which the demiurge made without organs of locomotion because these were unnecessary for this revolution (*Timaeus* 34 A). This Aristotle turns against the theory of free motion of the stars, saying that they would not have been reasonably deprived of locomotive organs by nature if they were to progress by themselves but that, if they do not do so, it is reasonable for both them and the whole heaven, which must rotate upon itself, to

be spherical, the shape most suitable for motion in the same place and most unsuitable for progression (290 A 29-B 11). If this argument scores a point against Plato, it is equally damaging to Aristotle's own denial of axial rotation, for if the stars do not rotate they should not have been given the shape which in the case of the universe is defended as most suitable for this motion (cf. Simplicius, *De Caelo*, pp. 455, 16-456, 6); but it does not in fact reveal any inconsistency in Plato's theory, for, while the axial rotation of the heavenly bodies is their own, a motion induced by their own souls and consonant with their spherical shape, they do not move forward "by themselves" but this progression is imparted to them by the "revolution of the Same," the intelligence of the world-soul which dominates all the other motions (*Timaeus* 36 C-D, 40 A-B; cf. Cornford, *Plato's Cosmology*, p. 119). This revolution of the heavenly bodies, then, arises not from their own nature but, in the language of *De Caelo* 284 A 18-35, is a motion imposed upon them by a "constraining" soul (see page 414 *supra*). Aristotle has still another argument, however, in support of his thesis, namely the difficulty which he claims gave rise to the theory that the motion of the heavenly bodies produces a harmony of sound (290 B 12-291 A 28; designated as Pythagorean at 291 A 8 [used by Plato in the myth at *Republic* 617 B]) He agrees with the Pythagoreans that bodies of such magnitude moving with such speed must produce a tremendous sound, but only if they move freely through a medium and not if they are fixed parts of a moving system. If the heavenly bodies did produce such a sound, however, even though custom had dulled our ears to it as the Pythagoreans say, its *force* would manifest itself in the way that thunder splits stones (cf. *Meteorology* 371 B 7-17). Since these effects obviously do not occur, the bodies cannot be causing sound and therefore cannot have any locomotion either animate or constrained. The phrase here used, οὔτ' ἂν ἔμψυχον οὔτε βίαιον φέροιτο φοράν, does not imply that their motion "is natural without being caused by soul" (so Guthrie, *Aristotle On the Heavens*, p. xxxv), for the point of the argument thus concluded is that they have *no* motion of their own; neither does it contradict the statements that the

heavenly bodies are animate (Guthrie, *loc. cit.*), for in these statements the living principle is not the visible star itself but the whole sphere or set of spheres (*De Caelo* 292 B 28-293 A 11; cf. Alexander, *Quaestiones* I, 25 [p. 40, 23-30, Bruns]; Aëtius, I, 7, 32 and II, 3, 4 [σφαίρας γὰρ περιέχειν ἐμψύχους καὶ ζωτικάς]; and the criticism of Atticus: ὁ δὲ ταύτης ἀφαιρεῖται τῆς κινήσεως αὐτούς, ἣν ὡς ἔμψυχοι κινοῦνται, μόνην δὲ ἀπολείπει τὴν ὑπ' ἄλλων περιεχόντων ὥσπερ ἀψύχοις συμβαίνουσαν [Eusebius, *Praep. Ev.* XV, 8, 4 = Baudry, *Atticos*, p 22]). It means that apart from their spheres the stars have neither of the two kinds of locomotion, that which originates from within and that which is caused from without (cf. Simplicius, *De Caelo*, p. 467, 5-7 with *Physics* 243 A 11-12 and Simplicius, *Phys.*, p. 1049, 6-9), both of which Plato could be said to ascribe to the heavenly bodies, the former being their axial rotation, the latter their translation under the domination of the world-soul.

Aristotle's argument against the free motion of the stars begins with the assumption of a stationary earth (*De Caelo* 289 B 5-6); when he comes to prove the point assumed he directs his argument against two theories, of which one made the earth one of the stars while the other situated it at the center but said that it is "coiling, that is moving" about the pole as its axis (296 A 25-27). The former he had already ascribed to the Pythagoreans (293 A 20-23) when giving the theories of the earth's position; in beginning the discussion of its rest or motion he had again described this theory (293 B 18-30) and then had listed as the other theory of a moving earth the second mentioned above: ἔνιοι δὲ καὶ κειμένην ἐπὶ τοῦ κέντρου φασὶν αὐτὴν ἕλλεσθαι καὶ κινεῖσθαι περὶ τὸν διὰ παντὸς τεταμένον πόλον ὥσπερ ἐν τῷ Τιμαίῳ γέγραπται (293 B 30-32). Instead of criticizing these two theories separately, he then attacks both at once with three arguments to prove that the earth must be at the center and immobile (cf. 296 B 21-22). The first of these is that, since every portion of earth moves in a straight line toward the center, any motion of the earth as a whole, whether at the center or outside of it, would be a motion of constraint and so could not be eternal as the order of the cosmos is (296 A 27-34). According to the third argument, the natural motion of

.l portions of earth must be essentially toward the center of ıe universe, with which for this reason the center of the earth)incides; that the courses of falling bodies form equal angles ith the horizontal plane at the point of contact shows that ıe motion of all is toward a single center; that of the earth, ıd the immobility of the earth is further attested by the fact ıat heavy bodies thrown upward however high return in a raight line to the spot whence they were thrown (296 B 6-5). The second argument, which alone is specifically astro-omical, contends that, since all the bodies with circular motion re observed to lag behind and to have more than one motion part from the primary motion, the earth if it were in motion .ther about the center or situated at the center would have to ave two motions, in that case, however, there would have to e excursions and retrogradations of the fixed stars, whereas ıe same stars always rise and set at the same places on earth 296 A 34-B 6).

The second of the two theories opposed, that with which is)nnected the reference to *Timaeus* 40 B-C (*γῆν δὲ τροφὸν μὲν ιετέραν ἰλλομένην δὲ περὶ τὸν διὰ παντὸς πόλον τεταμένον . . .* [the *ἣν* read by Burnet before *περὶ* is unknown to Aristotle, Cicero, nd all ancient authority; cf. Cornford, *Plato's Cosmology*, . 120, n. 1]), is represented as making the earth rotate on s axis at the center of the universe. This is established beyond ıe possibility of doubt by the repeated statement that the earth ı this theory *κειμένην ἐπὶ τοῦ κέντρου . . . κινεῖσθαι περὶ τὸν . . . όλον* (293 B 30-32; cf. 296 A 26-27 [*ἐπὶ τοῦ μέσου θέντες . . . ινεῖσθαί φασι περὶ τὸν πόλον μέσον*], 296 A 29 [*φέρεται . . . ἐπὶ τοῦ ίσου*], 296 B 2-3 [*ἐπὶ τοῦ μέσου κειμένη φέρεται*]) which is the oint of contrast with the Pythagorean theory in which it moves *ιτὸς σῖσα τοῦ μέσου* (296 A 28) and *περὶ τὸ μέσον* (296 B 2); this ontrast along with Aristotle's statement concerning the Pytha-orean theory, *ὅσοι μὲν μηδ' ἐπὶ τοῦ μέσου κεῖσθαί φασιν αὐτὴν* (*scil.* *πολαμβάνουσι*) *κινεῖσθαι κύκλῳ περὶ τὸ μέσον, οὐ μόνον δὲ ταύτην, ἀλλὰ αὶ τὴν ἀντίχθονα* (293 B 18-20, cf. 293 A 18-24), restricts his estimony concerning a moving earth to these two theories and nvalidates the attempts to interpret the second as giving the arth a "vibratory motion" (Prantl, *Aristoteles' Himmels-*

gebäude, p. 314), a "motion up and down on the axis of the universe itself" (Burnet, *E. G. P.*[3], p. 303; Taylor, *Commentary on Plato's Timaeus*, pp. 234-5) or a planetary revolution like that of the Pythagorean theory but in the immediate vicinity of the center of the cosmos (Schmekel, *Die Positive Philosophie*, I, pp. 139-40).

Still more concerning Aristotle's conception of the theories which he is opposing can be inferred from his second argument in refutation (296 A 34-B 6, page 546 *supra*). This argument has usually been explained as nothing more than the analogical one that the earth, if it has circular motion, must have two motions because all the planets are observed to have two motions, diurnal revolution and motion along the zodiac, and that like these the two motions of the earth must be oblique to each other (*Crit. Pres. Phil.*, p. 199; Heath, *Aristarchus of Samos*, p. 241; Duhem, *Le Système du Monde*, I, p. 227; Guthrie, *Aristotle On the Heavens*, p. 242, n. *a*). There is in the text, however, no expression of such an analogy. The basis of Aristotle's argument is not that the planets have *two* motions but that they have "more than one apart from the primary (i. e. the diurnal) motion," in other words that they all manifest at least three motions. This is the necessary sense of all the best MSS (. . . *κινούμενα πλείους μιᾶς φορᾶς ἔξω τῆς πρώτης*, EJLMΓ; cf. Themistius, *De Caelo*, p. 137, 29-32: vagantes igitur praeter primum motum . . . ab occasu ad ortum diversis motibus ferri conspiceremus [trans. S. Landauer]), which has been obscured by the editors who have adopted what is nothing more than a mistaken gloss (. . . *ἔξω τῆς πρώτης σφαίρας*, F; the *φορᾶς* which H reads here being probably a gloss also but a correct one); it is also in accord with Aristotle's other statements on the subject of planetary motion (*Metaphysics* 1073 A 28-31 [*ὁρῶμεν δὲ παρὰ τὴν τοῦ παντὸς τὴν ἁπλῆν φορὰν . . . ἄλλας φορὰς οὔσας τὰς τῶν πλανήτων ἀιδίους*], 1073 B 9-10 [*πλείους γὰρ ἕκαστον φέρεται μιᾶς τῶν πλανωμένων ἄστρων*] followed by the enumerations of Eudoxus, Callipus, and Aristotle [1073 B 10-1074 A 14] according to which the smallest number of motions, reckoning in the diurnal rotation, is three, the motions of the sun and moon [cf. Heath, *Aristarchus of Samos*, p. 220]; cf.

lso *De Caelo* 293 A 1 and 291 B 28-292 A 3). Moreover, the efutation now rests upon an appeal to the phenomena and not pon an analogy which would be so completely irrelevant to a heory of the earth's diurnal rotation at the center that some ritics have in consequence denied that Aristotle could here ave had such a theory in mind (cf. Heath, *op. cit.*, p. 241). The implication of Aristotle's expression is that, while his pponents may be supposed to have accounted for the lag of he planets, presumably by their own motion in the zodiac from West to East, and for the primary or diurnal revolution by the notion assigned to the earth, there are still other planetary notions which on their principles they could explain only by giving the earth a second motion. Since the addition of this econd motion to the first would according to Aristotle result n excursions and turnings of the fixed stars, the apparent notions of the planets for the explanation of which he claims t is necessary must be their excursions in latitude and retro-gradations. This is decisive against Cornford's belief (*Plato's Cosmology*, p. 133) that the second motion is thought neces-ary by Aristotle to counteract a diurnal motion from East to West shared by the earth with the first heaven; it is not the lternation of day and night but the complications of planetary notion which according to Aristotle requires this second motion of the earth. Nor does the passage imply that the opponents lid give the earth two motions; on the contrary, Aristotle rgues that they give it one motion, that certain phenomena equire them then to give it two, but that if they should thus atisfy this condition other phenomena would be upset. So it s also a misapprehension which causes Schmekel to infer (*loc. it.*) that, since not axial rotation at the center but only revo-ution of the earth in the sense of a planet could produce ' turnings " of the stars, it can be only the latter and not the ormer against which Aristotle here argues. Aristotle does not ay that the theory opposed has this effect (or that any *single* notion of the earth would have it) but that it does *not*, that t must be corrected in order to do so in the case of the planets, nd that *then* it would produce the same effect in the case of he fixed stars and so could not stand. On the other hand, his

failure to object that the theories concerned do not account for the apparent daily revolution means not, as Dreyer and Heath conclude (Heath, *op. cit.*, p 240), that such an intention on their part did not occur to him—in the case of the Pythagoreans this purpose is expressly stated (293 A 21-23) and the conjunction of the two theories implies the same purpose on the part of the second—but that he is willing to admit the explanation as regards this phenomenon by itself. This tacit admission alone would be a strong hint of what is made certainty by Aristotle's contention that his opponents must assign to *the earth*—not to the planets or the first heaven—the additional motion which he maintains the planetary phenomena require: that restriction (and upon it his refutation depends) implies that some principle of his opponents would prevent them from escaping the dilemma by admitting the additional motion but assigning it to the planets directly or to the influence on the planets of a motion of the first heaven, and that principle can have been only the assumption that the motion of the planets must be a single and simple motion from West to East and so the fixed stars must be *immobile*.

No attention seems to have been given by scholars to the fact that Themistius in his paraphrase (*De Caelo*, pp 137, 26-138, 3 [Landauer's translation, corroborated for me by W. A. Albright]) interprets the refutation of Aristotle as proceeding on the assumption that the first heaven is at rest and the earth in motion (etenim si inhaerentium stellarum orbis non movere tur et terra moveretur), as granting that the diurnal motion can be as well explained in this way (. . . primum motum, qui ab ortu ad occasum etiam fit si propter inhaerentium orbis motum vel propter motum terrae sit), and as then arguing that the planets, however, besides this diurnal motion would be seen to have motion not only in longitude from West to East but also in latitude (motu nempe qui secundum longitudinem fit . . . nec non etiam motu ex latitudine [cf. Landauer's note, approved by W. A Albright] simul) and that, the former being their proper motion, the latter must be due to a motion of the earth which will consequently have two motions, that from West to East and a motion in latitude, etc.

Consequently the statement that Aristotle attributes to no ne the view that the heavens are stationary (so e. g. Heath, *p. cit.*, p. 103) is at best only partially true. He attributes it o no one *by name*; but he argues against such a theory here, nd it should have appeared strange had he not done so some-/here, for at the beginning of his argument against free motion f the stars his statement of the possible explanations of the henomena and the way in which he expressed the preliminary ssumption of the earth's immobility (289 B 1-7) had distinctly nplied recognition of a theory which claimed to save the henomena by assuming at once a stationary heaven and an arth in motion (289 B 4-6: ἀμφότερα μὲν [*scil.* τὰ ἄστρα καὶ ὁ ὐρανός] τοίνυν ἠρεμεῖν ἀδύνατον ἠρεμούσης γε τῆς γῆς· οὐ γὰρ ἂν ἐγίγνετο ἃ φαινόμενα· τὴν δὲ γῆν ὑποκείσθω ἠρεμεῖν)

This theory of a moving earth (296 A 26-27: οἱ δ' ἐπὶ τοῦ ἴσου θέντες ἵλλεσθαι καὶ κινεῖσθαί φασι περὶ τὸν πόλον μέσον) is, how-ver, admittedly the same as that with which at the beginning f the previous chapter was connected the reference to the *Timaeus* (293 B 30-32, quoted on page 545 *supra*). The im-lications of that reference have been debated since antiquity, or it has been taken to mean that Aristotle ascribes motion o the earth in the *Timaeus* whereas the astronomy of that lialogue seems to be incompatible with such a notion. Once t is observed, however, that the theory to which Aristotle refers nakes the first heaven stationary, it becomes clear that this heory cannot be Plato's, who, whatever he may have thought f the earth, certainly ascribed real motion to the fixed stars. This in the *Timaeus* (39 B-C, 40 A-B) is the revolution of the ircle of "the same" and is identified with the diurnal motion. So too in the *Laws* (897 C-898 D) the fixed stars as well as he planets are moved by soul and so have real motion (cf. 897 C 4-5 ἡ σύμπασα οὐρανοῦ ὁδὸς ἅμα καὶ φορὰ καὶ τῶν ἐν αὐτῷ ὄντων πάντων . . ., 898 C 2-5: τὴν δὲ οὐρανοῦ περιφορὰν . . ., 898 D 3-7· ἥλιον καὶ σελήνην καὶ τὰ ἄλλα ἄστρα εἴπερ ψυχὴ περιάγει πάντα, ἆρ' οὐ ψυχὴ ἓν ἕκαστον, τί μήν;), a fact which of itself refutes the attempts o discover in 821 B-822 C a theory different from that of the *Timaeus* (against such attempts cf. further Cornford, *op. cit.*, pp. 89-91; Heath, *op. cit.*, pp. 182-184; Duhem, *op. cit.*, p. 97,

n. 2; Schmekel, *op. cit.*, pp. 141-146). Even in the pseudo-Platonic *Epinomis* there is a δύναμις of the fixed stars as well as of the sun, moon, and each of the five planets and the beings in all of these are in motion (986 A-B), it is οὐρανός that turns the heavenly bodies in the alternation of day and night (978 C-D), and the upper cosmos moves in the opposite sense to the seven planets (987 B on which passage cf. Cornford, *op. cit.*, pp 91-92; Heath, *op. cit.*, pp. 184-185 [for another interpretation of ἄγων τοὺς ἄλλους κτλ. cf. Duhem, *op. cit.*, p. 100, n. 1]). Moreover, Aristotle himself constantly represents Plato as giving motion to the first heaven (*De Caelo* 284 A 27-35 [page 540 *supra*], *De Anima* 406 B 32-407 A 2 and 407 B 5-12; cf. *Physics* 223 B 22: ἡ τῆς σφαίρας κίνησις, and 218 A 33-B 1: τὴν τοῦ ὅλου κίνησιν [a reference to Plato according to Eudemus and Theophrastus *apud* Simplicius, *Phys.*, p. 700, 18-19; cf *Physics* 251 B 17-19]), he cannot have meant, then, to refute Plato with an argument which presumes the opposite assumption, nor can he be here reading into the *Timaeus* a later theory of Plato's (Schiaparelli, *Scritti sulla Storia della Astronomia Antica*, I, p 392), for a stationary first heaven is incompatible both with the express statement of the *Laws* and with Aristotle's other references to Plato's astronomy. The fact is that he never ascribes the theory to Plato at all, and the only reason for thinking that he does is the supposition that the phrase ὥσπερ ἐν τῷ Τιμαίῳ γέγραπται simply defines the ἔνιοι who did hold it. This is not the only way of reading the sentence, however, nor even the most natural, which is rather to take the whole sentence as depending upon ἔνιοι δὲ . . . φασίν. So ὥσπερ ἐν τῷ Τιμαίῳ γέγραπται is part of Aristotle's quotation; it is those against whom he argues who to support their own theory quoted the *Timaeus* and interpreted ἰλλομένην there (40 B-C) as equivalent to κινουμένην. That the sentence should be read in this way Duhem perceived (*Le Système du Monde*, I, p. 88) even without having seen why Aristotle could not have meant it to be read otherwise.

The theory of stationary fixed stars and a central earth with axial rotation was put forward by Heraclides Ponticus (cf. the texts collected by Voss, *Heraclides*, *frags.* 50-54 [for *frag.* 49

= Simplicius, *Phys.*, p. 292, 9-23 cf. Tannery, *Mémoires Scientifiques*, IX, pp 255-8 and Heath, *op. cit.*, pp. 275-283]). implicius sees a reference to him when Aristotle first indicates is recognition of such an attempt to save the phenomena Simplicius, *De Caelo*, pp. 444, 32-445, 3); he mentions this heory of Heraclides again at the end of his discussion of the *imaeus* reference (*De Caelo*, p. 519, 9-11), and, commenting n Aristotle's final argument for the immobility of the earth, e states it for the third time (*De Caelo*, pp 541, 28-542, 2) long with a counter-argument, invalid and unreasonable as it tands but probably a perversion of Aristotle's second refutaion which Simplicius had not understood The author of the heory reported by Aristotle must have purposely borrowed the vord ἰλλεσθαι from the *Timaeus*. This the Ecphantus to whom ertain doxographers ascribe the theory could not have done nd this in itself argues against his historical existence (cf. lso Tannery, *op. cit.*, pp 235-9 and Heath, *op. cit.*, pp. 251-2; or Cicero's ascription to Hicetas cf. Tannery, *op. cit.*, pp 234-5 nd Heath, *op. cit.*, pp. 188-9, cf also Zeller-Mondolfo, *La Filosofia dei Greci*, I, 2, pp. 628-31); but it would be far from xtraordinary if Heraclides, a member of the Academy, had ought support for his theory by interpretation of a phrase of Plato's, and this is what is charged to Heraclides by Proclus when he says (*In Timaeum* 281 E): "How, then, when we have heard ἰλλομένην, can we reasonably make the earth εἱλουμένην καὶ στρεφομένην on the ground that we are saying what Plato means? Let Heraclides Ponticus, who was not a pupil of Plato (cf. *contra* Proclus himself, *In Timaeum* 28 C [= Heraclides, *frag.* 91]), hold this opinion since he moves the earth around" It seems practically certain, then, that the second theory opposed by Aristotle was that of Heraclides, whose further hypothesis concerning the orbits of Mercury and Venus (cf Heath, *op. cit.*, pp. 255-75) must have been proposed later and may even have been motivated by the second refutation of Aristotle here This refutation, incidentally, must assume for the Pythagorean theory also a first heaven which is stationary or, at any rate, has no motion perceptible from the earth (so it was claimed that the removal of the earth from the center need not

produce perceptible parallax [*De Caelo* 293 B 25-30]) What was really the Pythagorean intention in this regard may have been as uncertain for Aristotle as for modern scholars (cf. Schiaparelli, *op. cit.*, I, pp 374-5; Duhem, *op. cit*, I, p. 20; Heath, *op. cit.*, pp. 101-5); at any rate, it should be observed that in his account of the theory here he does *not*, as elsewhere he does (*Metaph*)*sics* 986 A 10), speak of ten moving bodies, a phrase which implies some motion of the fixed stars.

Because the interpretation of *Timaeus* 40 B-C was proposed not by Aristotle but by Heraclides and in support of his own theory it cannot therefore be dismissed out of hand as obviously without foundation The word there used by Plato and not transmitted without variant was in any case unusual Alexander argued (*apud* Simplicius, *De Caelo*, p. 518, 19-20), as have many after him, that Aristotle could not have mistaken the meaning of the expression; a modern scholar, on the other hand, maintains that Plato wrote εἰλλομένην, involving no conception of movement, but Aristotle had in his copy of the *Timaeus* the false reading ἰλλομένην, the meaning of which is "turning" (Burdach, *Neue Jahrbücher für das klassische Altertum*, XLIX [1922], pp 254-78) Either argument would apply equally well in the case of Heraclides, although it is unlikely that both Heraclides and Aristotle knew only a false reading; but, whatever form of the word Plato's contemporaries read, it must have been ambiguous to them, for otherwise it would have been either unnecessary or impossible to interpret it by adding καὶ κινεῖσθαι. The explanatory addition is itself an admission that the word could be taken to mean something other than motion. Moreover, Plato, who could not have been unaware of this ambiguity, must have used the word here with conscious purpose, for ἴλλεσθαι occurs nowhere else in his writings and εἴλλεσθαι, with various spellings, only twice, both times in the *Timaeus* (76 B-C and 86 E, on which and the problematical εἰλεῖν of *Cratylus* 409 A [to be connected rather with the εἴλησις of *Republic* 380 E and 404 B, cf. Eustathius, 1573, 46] cf. Burdach, *op. cit.*, p. 271).

Now, Cornford contends (*op. cit.*, pp 130-134) that the revolution of "the same," being a movement of the world-soul

which is " everywhere inwoven *from the center to the extremity* of heaven," must affect the earth as well as the planets (cf. *Timaeus* 36 E, 34 A-B), that the earth, being a heavenly god (*Timaeus* 40 C 2-3), ought to have, in addition, an individual motion of axial rotation as do the stars and planets (40 A-B), and that unless she had this second daily rotation on her axis she would be carried round by the diurnal motion of the whole and there would be no day and night. According to Cornford it was to describe this rotation which *counteracts* the motion of " the same " that Plato used the word ἰλλομένην, avoiding στρεφομένην and the like lest he be thought to give earth an absolute rotation and so not to see that day and night would thereby be upset; from this word, then, Aristotle concluded that the plane of the counteracting rotation was meant to be oblique to that of the rotation shared by the earth with the whole universe, whereas Plato meant that the self-motion of the earth " takes place in the same plane as that of the first motion—the plane of the equator—and exactly cancels it."

The error in this explanation of Aristotle's argument has already been pointed out: the theory which he opposes is not represented as itself giving the earth two motions or a compound movement of rotation on two axes (pages 548-549 *supra*). Moreover, the reason adduced for the use of ἰλλομένην is unconvincing, for, if Plato had wanted to say that the earth has a rotation equal and contrary to the movement of " the same," he could have avoided misunderstanding with an expression on the pattern of such phrases as τὴν ἐναντίαν φορὰν περιφέρεσθαι or κυκλεῖσθαι (cf. *Republic* 617 A), εἰς τἀναντία περιάγεσθαι, τὴν ἐναντίαν περιαγωγὴν στρέφεσθαι, and ἐπὶ τἀναντία κυκλεῖσθαι (cf. *Politicus* 269 C, 269 E, 270 B). Cornford admits that in the relation of motion obtaining between the fixed stars and the earth the former term has an " absolute rotation " and the latter has not, but he maintains that this rest of the earth " in relation to absolute space " is due to her real axial rotation. He is certainly right, as was Martin before him, in insisting that the world-soul must affect the earth which consequently needs some counteracting force to prevent it from being carried round with the same movement as that of the stars, that Plato

recognizes this necessity when he calls the earth the guardian and producer of day and night, and that he would derive this force from the soul which he must mean the earth to have since he calls her the first of the gods that are within the heaven. In Plato's astronomy, however, there are no material spheres or circles to mediate the motion of "the same" to the interior bodies; that motion affects directly the bodies which "share" it, each of the fixed stars individually, which "move freely though they keep their relative positions" (cf Cornford, *op. cit.*, p 119), and each of the planets, the spiral tracks of which are not merely apparent but are their real movements resulting from two contrary and oblique impulses of the world-soul directly upon each of them (*Timaeus* 39 A-B, 40 B 6-8; cf. Cornford, *op. cit.*, p. 118, n. 3 and pp 90-91). Cornford has himself rightly pointed out that the motion of "the different," though spoken of as single, exists physically only as distributed among the seven planets (*op. cit.*, pp. 78-79); there is no reason to interpret otherwise the motion of "the same": Plato speaks of the rotation of the world and the rotation of the world-soul before taking up the creation of stars and planets (*Timaeus* 34 A-B, 36 D-E), but this rotation exists physically only in the freely moving bodies to which it is imparted. The impulse of the world-soul upon the earth also must be direct, then, and the equal and opposite impulse of the earth's individual soul could not make its body rotate in the contrary sense as if it were its own reagent sphere in an Aristotelian system; the two contrary forces of rotation acting directly upon the earth must annul each other and produce complete immobility, as Martin contended. The effect is the same as it would be if in the *Politicus* myth the two opposite impulses on the cosmos were equal and simultaneous (*Politicus* 270 A, 273 A)

Here in all probability is the reason for Plato's choice of the rare and ambiguous ἰλλομένην. He needed a word to signify a state of rest which is the result of continuous counteraction to a force of rotation and therefore itself a kind of "rotatory resistance" At the same time, although he could have maintained that such rest is a living activity quite different from

inanimate immobility, it would surely have been embarrassing for him to say baldly that the earth must be kept stationary by that which he regularly makes the principle of motion. So in the case of the earth he does not explicitly relate the bodily to the psychical activity as he had just done in asserting the axial rotation of the stars (40 A 8-B 1), and he indicates its resistance with a word which like the English "coiling" or "twining" may signify either a state of rest, the result of a particular kind of exertion, or the continued exertion which produces that state (cf. *Symposium* 206 D where ἀνίλλεται [so Robin with Plotinus and Pap. Ox.; ἀνείλλεται, Burnet with BW] is joined with συσπειρᾶται and ἀποτρέπεται and opposed to διαχεῖται [cf. the contrast of ἴλλε or εἴλλε and ἀποχάλα in Aristophanes, *Clouds* 761-2]; and n b. the opposite meaning of ἀνειλλομένη in *Critias* 109 A). Heraclides could, then, by taking the phrase out of its context make it support his own theory, but, without the context into which he set it, it cannot be certain whether even he meant to say that Plato had *intended* to assign axial rotation to the earth He may have meant only, what is obvious, that the elimination of the movement of "the same" automatically transforms the astronomy of the *Timaeus* into his own system the fixed stars would become stationary (their axial rotation probably being retained, since each is itself an earth with its atmosphere [Heraclides, *frag.* 58]), the planets would each have a simple circular revolution from West to East in the plane of the ecliptic, and the earth's counter-pressure against the motion of "the same" would become a daily axial rotation from West to East in the plane of the equator The author of the *Epinomis*, on the other hand, since he expressly limits the sum of astronomical motions to eight, one of which is that of the fixed stars (986 A-987 B, 990 A-B), could not have supposed the earth to be in motion The sentence at 983 B 7-C 5, which has sometimes been cited as evidence that he did so (cf. Cornford, *op. cit.*, p 130, n 3), proves nothing to the contrary, since there γῆν τε καὶ οὐρανόν is merely a solemn expression for "the whole material universe" (cf *Sophist* 232 C), this general subject of the accurate annual, monthly, and daily procession being then specified by the phrase ἅπαντάς

τε ἀστέρας ὄγκους τε ἐκ τούτων σύμπαντας (cf. 982 C: ἄστρα τε καὶ σύμπασαν ταύτην τὴν διαπορείαν); the object of the whole preceding argument (982 C-983 B) has been τὰ ἄστρα, and the author here may either not be thinking at all of the part played by the earth or be taking for granted its immobility which is caused by its own soul.

Aristotle does not express either agreement or disagreement with the "interpretation" of the *Timaeus* which he reports; but there is some indirect evidence that he supposed that dialogue to represent the earth as stationary. In the first place, his exhaustive refutation of the theory that the earth remains at the center because of equilibrium (*De Caelo* 295 B 10-296 A 21) is not aimed at Anaximander alone; the words which assign the theory to him, εἰσὶ δέ τινες . . . ὥσπερ τῶν ἀρχαίων Ἀναξίμανδρος, indicate that it is the theory of some "modern" thinker as well (cf. Alexander *apud* Simplicius, *De Caelo*, p 532, 7-9). It occurs in Plato's writings; and Simplicius' objection (*De Caelo*, p 535, 4-8) to the effect that Aristotle does not mention ἰσορροπία here shows only that he is thinking not so much of *Phaedo* 108 E-109 A, which Simplicius has in mind (cf. *De Caelo*, pp. 532, 1-2 and 535, 28-29), as of *Timaeus* 63 A 1-2 (cf. Themistius, *De Caelo*, p. 131, 12-13 and Simplicius' own confusion of the two passages in his comment [*Phys.*, p 666, 24-26] on *Physics* 214 B 31-33 [οἱ διὰ τὸ ὅμοιον φάμενοι τὴν γῆν ἠρεμεῖν]). Of itself such a theory of the earth's continuance at the center could be thought compatible with its axial rotation (cf Alexander *apud* Simplicius, *De Caelo*, p. 532, 9-12); but Aristotle's use of the word ἠρεμεῖν in his argument (295 B 18, cf. *Physics* 214 B 31-33), his attempt to show by way of refutation that, even if true, the theory would not be incompatible with *all* motion of earth (296 A 3-21; cf. Guthrie, *Aristotle On the Heavens*, pp 238-9, n.), and the fact that this theory is examined in a section separated from the account of the theories of a moving earth (293 B 15-32) and devoted to the various explanations of the earth's immobility (294 A 10-296 A 21; cf. Simplicius, *De Caelo*, p 520, 24-521, 1), all indicate that he took the proponents of this explanation to mean that the earth is at rest at the center of

the universe. Furthermore, the argument of *De Motu Animalium* 699 A 27-B 11 points to the same conclusion. When Aristotle interprets the myth of Atlas as meaning that the celestial axis causes the heavens to turn about the poles and by refuting it claims to have proved that the heavens cannot be moved by any such internal force (699 B 1-2 and 10-11), the object of his concern is obviously some more serious theory than the myth itself; that it is Plato's theory of the world-soul can be concluded both from the similar procedure of *De Caelo* 284 A 18-35 where that theory and this myth are brought together (see page 540 *supra*) and from the fact that the question which motivates the whole discussion here is whether the mover of the universe is part of the universe as the soul is of the living creature (699 A 12-17 [cf. Michael Ephesius, *De Motu Animal*, p. 107, 9-13]). The refutation of the theory of an internal mover, however, is based upon the assumption that according to that theory the earth is at rest; of this Aristotle approves, but he argues that in this case it would be impossible because in order to remain stationary the earth would have to exert a counter-pressure equal to that of the whole heaven and that which moves it. In short, he declares it impossible that the force of the earth should be great enough to cancel that of the world-soul, which is just the explanation of the earth's immobility that appears to be intended in *Timaeus* 40 B-C.

This theory of an internal movement is presented in contrast to another, according to which no part of the rotating spherical universe can be at rest, since that would disrupt the continuity of the whole (*De Motu Animalium* 699 A 17-24) In so far as this implies a mover which is not part of the universe, it is approved by Aristotle He objects, however, to the further doctrine that the moving force is inherent in the celestial poles which, being points without magnitude, are not parts of the sphere; such things, he contends, have no substantial existence, and, furthermore, a *single* movement cannot be caused by the *two* poles The stress which Aristotle lays on the immobility of the earth in the contrasted theory seems to imply that in this one, as consistency would demand, the earth was supposed to be

in motion. The motion of the whole sphere differentiates it from the system of Heraclides; and its fundamental assumption, that the point has subsistence but no magnitude, connects it most plausibly with Speusippus whose doctrine this was (cf. *Metaphysics* 1085 A 32-34, 1085 B 27-34, 1090 B 5-13 and contrast for the Pythagoreans 1080 B 16-21 [see page 131 and notes 82 and 83 *supra*]). It is tempting to take as a reference to this the report of Theophrastus (*Metaph.*, 11 A 23-25 =Speusippus, *frag.* 41), ὥσπερ Σπεύσιππος σπάνιόν τι τὸ τίμιον ποιεῖ τὸ περὶ τὴν τοῦ μέσου χώραν τὰ δ' ἄκρα καὶ ἑκατέρωθεν, understanding this to mean that τὸ τίμιον is restricted to the center *and* the extremes, i. e. the poles of the celestial axis (cf. Proclus' "esoteric explanation" of *Republic* 616 C in his argument for the substantiality and "power" of the points which are the center and the poles [*In Primum Euclidis Librum*, p. 90, 11-14, Friedlein; cf. *In Rempublicam*, II, pp. 209-13, Kroll]). There is nothing astronomical, however, about the expression or context of Theophrastus' report; and, furthermore, it is likely that τὰ δ' is adversative to τὸ τίμιον, meaning "but the rest he considers to be extremes and on either side of the center." This is, therefore, most probably a reference to Speusippus' ethical argument that only the mean is good, the terms on either side being contrary to it as well as to each other: τὸ μεῖζον ἀντίκειται τῷ ἐλάττονι καὶ τῷ ἴσῳ, καὶ τὰ μὲν ἄκρα, ἤτοι τὸ μεῖζον καὶ τὸ ἔλαττον, ἐστὶν κακά, τὸ δὲ μέσον, ἤτοι τὸ ἴσον, ἀγαθόν ἐστιν (Anonymus *in Eth. Nic.*, p. 452, 31-33 [= Speusippus, *frag.* 60 e]; cf. Speusippus, *frags.* 60 f and g and *Eth. Nic.* 1153 B 5-6, 1173 A 5-9 [see page 37 *supra*]); Aristotle himself uses the same words with regard to virtue as a mean, saying that goodness is σπάνιον because it is a μέσον of ἄκρα (*Eth. Nic.* 1109 A 20-B 26).

Those who take the passage of Theophrastus as evidence that Speusippus held the Pythagorean theory of a central fire round which the earth revolves appeal for support of this interpretation to *De Caelo* 293 A 27-B 1 (e. g. Ross and Fobes, *Theophrastus, Metaphysics*, p. 74, E. Frank, *Plato und die sogenannten Pythagoreer*, pp 252 and 286), a passage which has also been said to show that Plato himself had adopted this theory (cf. A. E. Taylor, *A Commentary on Plato's Timaeus*, pp. 229-31; Mondolfo, *L'Infinito nel Pensiero dei Greci*, p. 328,

1 2) or at least that some of his immediate successors had done so (Heath, *Aristarchus of Samos*, pp. 186-7). There Aristotle, having just charged the Pythagoreans with constructing their astronomical system not by seeking causes which conform to the phenomena but by forcing the phenomena into conformity with certain of their own opinions, adds· πολλοῖς δ' ἂν καὶ ἑτέροις συνδόξειε μὴ δεῖν τῇ γῇ τὴν τοῦ μέσου χώραν ἀποδιδόναι, τὸ πιστὸν οὐκ ἐκ τῶν φαινομένων ἀθροοῦσιν ἀλλὰ μᾶλλον ἐκ τῶν λόγων, for they think that the most honorable place belongs to the most honorable thing, that fire is more honorable than earth, the limit more honorable than the intermediate, and that the extreme and the center constitute limit, so that ἐκ τούτων ἀναλογιζόμενοι οὐκ οἴονται ἐπὶ τοῦ μέσου κεῖσθαι τῆς σφαίρας αὐτήν, ἀλλὰ μᾶλλον τὸ πῦρ. He then gives a further argument of the Pythagoreans which he proceeds to refute (293 B 1-15). Now Alexander knew of no one besides the Pythagoreans who up to the time of Aristotle had held that fire and not earth is situated at the center, and Simplicius suspected that Aristotle did not mean to suggest that anyone else had held such a doctrine (Simplicius, *De Caelo*, p. 513, 7-12), while Themistius took it for granted that Aristotle had no such intention (*De Caelo*, p. 124, 3-7). Certainly πολλοῖς ἂν καὶ ἑτέροις συνδόξειε κτλ. says not that many others *do* agree but that they too *could* or *might* agree if they were to proceed from *a priori* principles (cf. *De Caelo* 277 B 29-30: δόξειε γὰρ ἂν ὠδὶ σκοπουμένοις κτλ., where the suggested conclusion was never drawn from the principles, which are Aristotle's own; for ἀθροοῦσιν . . . ἐκ τῶν λόγων cf. *Physics* 204 B 4-5. λογικῶς μὲν οὖν σκοπουμένοις . . . δόξειεν ἂν οὐκ εἶναι); and the conclusion, ἐκ τούτων ἀναλογιζόμενοι οὐκ οἴονται κτλ, also expresses a condition and not a fact and means that if they reckon from these principles they do not really believe that earth is at the center (cf *Physics* 209 B 5-6: οὕτω . . . σκοποῦσιν ὁ τόπος τὸ ἑκάστου εἶδός ἐστιν. ᾗ δὲ δοκεῖ κτλ. and *Metaphysics* 1029 A 18-19: ὥστε . . . ἀνάγκη . . οὕτω σκοποιμένοις). Moreover, Aristotle himself employs the principles here ascribed to the πολλοὶ ἕτεροι, the superiority of fire to the other simple bodies (*De Generatione* 335 A 14-21, cf *Meteorology* 379 A 16), the superiority of the limits to the intermediates (*De Caelo* 293 B 13-15), the determination of limit as extreme and center (*De Caelo* 310 B

7-11); and in answering the further argument of the Pythagoreans (293 B 1-15) he does not directly deny what they say about the appropriateness of placing fire in the center but, asserting that τὸ μέσον is ἀρχὴ καὶ τίμιον, contends that this applies to the *natural* and not the *geometrical* center in the case of the universe just as in that of animals (cf. *De Part. Animal.* 665 B 18-21. ἔχει δὲ καὶ ἡ θέσις αὐτῆς [*scil.* τῆς καρδίας] ἀρχικὴν χώραν· περὶ μέσον γάρ . . . . ἐν τοῖς γὰρ τιμιωτέροις τὸ τιμιώτερον καθίδρυκεν ἡ φύσις, οὗ μή τι κωλύει μεῖζον [cf. Theophrastus, *Metaph.* 11 A 8-12]). In short, Aristotle includes himself among the πολλοὶ ἕτεροι and means not that anyone besides the Pythagoreans did put fire rather than earth at the geometrical center but that many others, though they accept principles which would on abstract reasoning lead to this conclusion, do not, as the Pythagoreans do, make such principles rather than the phenomena the basis of their astronomy

Aristotle, then, says nothing to suggest that a non-geocentric hypothesis had been adopted by Plato or any of the Platonists; among the latter Philip of Opus, like Aristotle himself, appears to have ascribed such a theory only to some of the Pythagoreans (Aëtius, II, 29, 4). Those who hold that Plato did abandon the geocentric hypothesis, however, cite as "unimpeachable testimony" Plutarch's statement that according to Theophrastus Plato when he had grown old regretted having assigned to the earth, as unbefitting it, the central position of the universe (*Quaest. Plat.* 1006 C, cf *Numa* XI; cf. Burnet, *Thales to Plato*, p 347 and *E. G. P.*[3], pp. 304-5; Taylor, *op. cit*, pp. 228 and 231; E Frank, *op. cit.*, p. 207; Mondolfo, *op. cit.*, pp 329-30). Cornford has shown (*op. cit.*, p. 125, n. 1) that such a statement could hardly have occurred in Theophrastus' *Physical Opinions*, as Taylor supposes, in which, on the contrary, so far as can be inferred from Aëtius it was assumed that for Plato the earth was stationary at the center (cf. also Aëtius, III, 15, 10). He points out that there is no hint of a central fire in either the *Laws* or the *Epinomis* nor any persuasive indication of planetary motion of the earth (*op. cit.*, p. 125). In fact, in the *Laws* only the "sun, moon, and other stars" are mentioned as revolving (898 D-899 B) while the correction of the popular misapprehension about their courses still makes them revolve about the

earth, concerning the position of which no correction is suggested (822 A); and in the *Epinomis* the restriction of the astronomical motions to eight, one of which is that of the fixed stars, rules out the possibility of the earth's revolution (986 A-987 B, 990 A-B). The statement of Theophrastus Cornford then seeks to explain (*op. cit.*, p. 128) by supposing the elderly Plato to have said that he should have acknowledged the core of the central earth and *so* the center of the universe to be the rightful place of fire as the most honorable element; and he supports this interpretation of Theophrastus' remark by adopting the view that Simplicius' account (*De Caelo*, p. 512, 9-20) of "more genuine" Pythagoreans who situated the central fire in the heart of the earth really represents a doctrine more primitive than the "Philolaic" system, that Simplicius took this report of it from Aristotle's books *On the Pythagoreans*, and that it is this kind of doctrine that Aristotle intended to ascribe to the "others" in *De Caelo* 293 A 27-B 1 (Cornford, *op. cit.*, pp. 126-8). This can hardly be correct, however, for, even apart from the true meaning of *De Caelo* 293 A 27-B 1, Simplicius himself did not suppose that passage to refer to the "more genuine" interpretation which he reports (*De Caelo*, p. 513, 7-12) and his introduction to this variation itself shows that he did not have it from Aristotle (*De Caelo*, p. 512, 9-10: καὶ οὕτω μὲν αὐτὸς [*scil.* Aristotle] τὰ τῶν Πυθαγορείων ἀπεδέξατο [referring back to the "Philolaic" system for which *On the Pythagoreans* was cited, p. 511, 30-31], οἱ δὲ γνησιώτερον αὐτῶν μετασχόντες . . . λέγουσι). His source, which is no more indicated by his citation here (p. 512, 13) of *On the Pythagoreans* for the epithet Ζηνὸς πύργος than it is by the concomitant citation of *De Caelo* for Διὸς φυλακή, is likely, in fact, to have been Iamblichus (cf. *De Caelo*, p. 507, 12-14). Moreover, that Aristotle was unaware of any later Platonic pronouncement such as Cornford's interpretation of Theophrastus assumes is at least suggested by his treatment of the theory of rivers in the myth of the *Phaedo* (111 C-113 C). According to that theory the center of the earth is occupied by a mass of water from which flow originally and into which ultimately empty again all the rivers and seas of the earth, for these are all connected directly or indirectly with the chasm Tartarus which traverses the whole earth and

passes through its center. The water of Tartarus, thus having no bottom or support, oscillates up and down causing the influx and efflux of all the rivers. This theory is set forth at length and opposed in full seriousness by Aristotle (*Meteorology* 355 B 32-356 A 33) not only with the arguments that it disregards the generation and evaporation of water and is inconsistent with the observed fact that all rivers ultimately empty into the sea, the fullest being those with the longest courses, but on the ground that water on this theory will not have a single direction of motion since the flow of the rivers will follow the oscillation of Tartarus past the center and so flow "up." This is the first and most significant of Aristotle's arguments, since his treatment of the theory occurs in connection with the establishment of his own thesis that the place occupied by the sea is the proper place not of the sea as such but of water (355 A 32-B 32; 356 A 33-B 3). The argument thus assumes the doctrine of proper place and natural motion, although Plato has made it clear that he considers merely conventional the popular notion of an absolute "up" and "down" (*Phaedo* 112 C 1-2 and 112 E 2-3 [cf. Robin, *Phédon*, 1934, pp. lxxi f.]). Some have seen in this section of the *Phaedo* a purposeful contrast to the "central fire" of the Pythagoreans (cf. Robin, *op. cit.*, p. lxxi, n. 1); but, however that may be, Aristotle certainly treats it as if it made the center the "proper place" of water, and, had he known any later statement of Plato's which asserted to the contrary that the core of the central earth was the "rightful place" of fire, it is highly unlikely that he would have refrained from making use of it here.

In any case, Plutarch must have understood Theophrastus to mean that Plato had abandoned the geocentric system, for he cites the statement as implying a theory of the earth similar to that of Aristarchus and Seleucus (*Quaest. Plat.* 1006 C) and refers to it again as implying one like that of the "Philolaic" system (*Numa* XI). Since this is in conflict both with Plato's latest writings and with the evidence of Aristotle (cf *De Caelo* 295 B 10-296 A 21 [pages 557-558 *supra*]), something like Tannery's theory (*Mémoires Scientifiques*, IX, p 234) that Theophrastus was merely drawing on a dialogue in which Plato was a character is possible; but the verbal similarity of Plu-

arch's citation to *De Caelo* 293 A 27-B 1 makes it far more robable that Theophrastus, mistaking that passage for a reference to Plato, as have many modern scholars, and finding no uch theory in Plato's writings, explained this discrepancy by upposing that Plato in his old age had given oral expression o his change of opinion. He too may have believed that this hange is hinted at in the fragmentary sentence with which the *ritias* breaks off (121 C), a sentence which is cited by some odern scholars as evidence that Plato had adopted the Philolaic" theory (E Frank, *op. cit.*, pp 217-18, A. E. Taylor, *lato*, p. 462), for it is there said that Zeus gathered all the ods to their most honorable dwelling which, situated in the iddle of all the universe, oversees all that has part in becoming. There is no real reason, however, why this "most onorable dwelling" should not be the earth (cf "Timaeus ocrus" 97 D [γᾶ δ' ἐν μέσῳ ἱδρυμένα ἑστία θεῶν] and Theophrastus *pud* Porphyry, *De Abstinentia* II, 32). In the *Phaedrus* (247 -E) Hestia alone of the gods remains in their home within the eavens. If this were the "central fire," Plato would have hifted from the "Philolaic" theory in the *Phaedrus* to the eocentric theory in the *Timaeus* and back to the "Philolaic" heory in the *Critias*, having held the geocentric theory earlier n the *Phaedo* and returning to it finally in the *Laws*. This bsurd oscillation vanishes, however, if Hestia in the *Phaedrus* e associated with the earth (Dercyllides *apud* Theon Smyrn., p. 00, 7-8 [Hiller]; cf. Sophocles, *frag.* 588 [Nauck] = 615 Pearson]; Plutarch, *Quaest. Conviv.* 704 B and *De Primo rigido* 954 F; Philo, *De Cherubim*, § 8, sec. 26 [p. 143, M.]; i. b. the epithet πρώτη καὶ πρεσβυτάτη θεῶν applied to the central arth in *Timaeus* 40 C amounting to identification of it with Hestia through the primacy of the latter in sacrifice [cf. *ratylus* 401 B-E; Pindar, *Nemean* XI, 1-7; *Hom. Hymn* (XIX)], for then it is only reasonable that in the *Critias* also he τιμιωτάτη οἴκησις of the gods should be the central earth (cf. lso *Phaedo* 111 B).

APPENDIX IX

Note 338 on Page 409

Although Robin tries to elicit from Aristotle an account of the intermediacy of the soul in Plato's theory (*Idées et Nombres*, pp. 479-498), he cannot cite a single explicit reference to this characteristic nor is any such reference even implied in the few passages on which he bases his reconstruction. Of these passages *De Anima* 429 A 27-29, far from representing Plato's theory as Philoponus conjectured (*De Anima*, p. 524, 6-16), is Aristotle's qualified approbation of a suggestion rejected by Plato (*Parmenides* 132 B-C; cf. Friedländer, *Die Platonischen Schriften*, pp. 466 f.); the passage is quoted by Plutarch in such a way as to show that he did not suspect any reference to Plato (*De Iside* 374 F), and Alexander though mentioning a theory which made the ideas νοήματα obviously distinguishes it from Plato's doctrine (*Metaph.*, pp. 92, 18-28 and 103, 1-4). Aristotle's qualification, πλὴν ὅτι οὔτε ὕλη. ἀλλ' ἡ νοητικὴ (*scil.* ψυχή), refers to the use of the unrestricted term ψυχαί in the *Parmenides* passage, the last sentence of which (132 C 9-11) was obviously in his mind when he stated the problem at the end of this chapter (429 B 26-29; cf. Shorey, *A. J. P.*, XXII [1901], p. 161). Furthermore, the notion that the ideas exist in the soul (cf. *Parmenides* 132 B: οὐδαμοῦ αὐτῷ [*scil.* τῶν εἰδῶν ἑκάστῳ] προσήκῃ ἐγγίγνεσθαι ἄλλοθι ἢ ἐν ψυχαῖς) precludes the possibility of a soul intermediate between phenomena and ideas; and that Aristotle saw no such intermediacy involved in this theory is proved not only by his silence on that subject but also by the fact that he qualifies his agreement because he supposes this theory to make the ideas exist in the soul *in actuality* (πλὴν ὅτι οὔτε . . . οὔτε ἐντελεχείᾳ ἀλλὰ δυνάμει τὰ εἴδη).

The same objections must be made to Robin's treatment of *De Anima* 404 B 18-27. In the first place, whatever may be the meaning and reference of this passage, it is unjustifiable, as has already been observed (note 336 *supra*), to infer from it the nature of the "elements" mentioned in 404 B 16-18 and 406 B 26-407 A 2, for both of these passages profess to report

e account in the *Timaeus* and so should correspond with that alogue Even by itself, however, and apart from this par-ɔular procedure, the text of *De Anima* 404 B 18-27 does not ıpport the use to which Robin puts it This passage, in which ıato's name is not mentioned, he takes without question to fer to Plato's own doctrine (*Idées et Nombres*, p. 480 and ɔtes 273, III-IV, and 274); in this he is in accord with almost l critics, commentators, and translators (cf., however, *contra*: ose, *Aristoteles Pseudepigraphus*, p. 27; Shorey, *De Platonis learum Doctrina*, p. 35, n 4 and *A. J. P.*, XXII [1901], p 152; Vilamowitz, *Platon*, I, p 705, n 1; and even Taylor who, while :ferring 404 B 18-21 to Plato, is doubtful about the reference f 404 B 21-27 [*A Commentary on Plato's Timaeus*, pp 110-11]). The words which introduce the passage, ὁμοίως δὲ καὶ ἐν ῖς περὶ φιλοσοφίας λεγομένοις διωρίσθη, Robin, like many others, ıkes to be a reference to Plato's oral lectures, the ἄγραφα ίγματα of *Physics* 209 B 14-15, of which Aristotle's περὶ τἀγαθοῦ ɔould have been a résumé (*Idées et Nombres*, n. 273, IV and ıe references there; cf. also E. Frank, *Plato und die sogenann-en Pythagoreer*, pp. 113-14) The interpretation of the passage s a report of Plato's doctrine is at least as old as Iamblichus *apud* Stobaeus, *Eclog.* I, 864 [= I, p 364, 12-18, Wachs-ıuth]). The introductory words are explained by Philoponus *De Anima*, p. 75, 34-35) and Simplicius (*De Anima*, p. 28, -9) as Aristotle's reference to his writing entitled περὶ τἀγαθοῦ, ɔut Themistius (*De Anima*, p. 11, 18) paraphrases them as a eference to the περὶ φιλοσοφίας. Since none of these three com-nentators knew either of these works (see notes 77 and 95 *upra*), their evidence on this point is worthless (and Wila-nowitz's use of Simplicius [*Platon*, I, p. 705, n 1] is conse-ɔuently mistaken), except that Themistius supports the *formal* ɔossibility of understanding ἐν τοῖς περὶ φιλοσοφίας λεγομένοις as a eference to the dialogue περὶ φιλοσοφίας. (So the words have ɔeen understood by some interpreters, e g Ravaisson in his *Essai sur la Métaphysique d'Aristote*, I, p 64 and Gentile in *La dottrina platonica delle idee numeri*, p. 146, n 2; Stenzel [*Zahl und Gestalt*, p. 95] calls the passage a citation from Aristotle's " περὶ τἀγαθοῦ referierende Dialoge περὶ φιλοσοφίας," whereby περὶ τἀγαθοῦ becomes, however, a Platonic " Lehrschrift " [*op. cit.*,

p. 94, n. 2] instead of Aristotle's account of Plato's lecture and the difference between the two works of Aristotle appears to be obliterated.)

Themistius does afford some positive evidence concerning the passage, however, for after explaining 404 B 18-21 he says (*De Anima*, pp. 11, 37-12, 1 [Xenocrates, *frag.* 39]) that all this is to be found in the περὶ φύσεως of Xenocrates. That he did know this work of Xenocrates appears probable from the way in which he refers to it elsewhere (*De Anima*, pp. 31, 1-5 and 32, 31-34; see note 325 *supra* against Heinze). In any case, this indication that the passage in question may have to do with Xenocrates rather than Plato can be verified from Aristotle's own text. In 404 B 18-21 the constitutive factors of αὐτὸ τὸ ζῷον are said to be "the idea of unity and the primary length, breadth, and depth"; in the next sentence (404 B 21-24) unity is identified with νοῦς, two is the number of the line, three the number of the plane, and four the number of the solid. Whether the words which connect these two sentences (ἔτι δὲ καὶ ἄλλως) are meant to mark them as alternative statements of a single notion or as different aspects of one theory,—or even as two different but related theories,—Aristotle clearly regards the four factors mentioned in either sentence to be the same as those in the other. Both sentences, therefore, refer to a theory—or theories—which made the primary length or idea of line the number two, the primary breadth or idea of plane the number three, and the primary depth or idea of solid the number four (cf. Themistius, *De Anima*, p 11, 32-37) Now, in *Metaphysics* 1036 B 13-15 Aristotle makes a distinction among those who assert the existence of ideas: some of them, he says, make the dyad αὐτογραμμή while others make the idea of line αὐτογραμμή. (Ross' perverse interpretation of this passage, "some make 'two' the line-itself, and others make it [i. e 'two,' cf. Ross, *Metaphysics*, II, p. 203 *ad loc.*] the form of the line" [*Oxford Translation*], not only makes nonsense of the passage but also violates the elementary rules of Greek grammar, for αὐτογραμμή without the article must be predicate to both τὴν δυάδα and τὸ εἶδος τῆς γραμμῆς. Tredennick in his translation of the *Metaphysics* [L. C. L.], I, p. 365 apparently follows Ross, as does Stenzel [*Zahl und Gestalt*, p. 177]; but, with these exceptions,

all the commentators ancient and modern and all the translators have seen agree with the obviously correct interpretation which I have given above [cf., besides the commentaries of Pseudo-Alexander, Asclepius, Schwegler, and Bonitz *ad loc.* and the translations of Bonitz, Rolfes, and Tricot, especially the remarks of Robin, *Idées et Nombres*, note 252 and page 621].) The second of these, the identification of αὐτογραμμή as the idea of line (the οἱ δέ of 1036 B 14), corresponds exactly with that characteristic of the "orthodox" theory of ideas which Aristotle repeatedly describes and criticizes (cf. *Metaphysics* 997 B 5-12, 1040 B 30-1041 A 3, *Eth. Nic.* 1096 A 34-B 5 [see pages 201-203 *supra*]). On the other hand, the identification of αὐτογραμμή with the dyad by some of those who posit ideas (the οἱ μέν of 1036 B 14) corresponds with the doctrine described in *Metaphysics* 1090 B 20-32 as one which was held by men who posited ideas and who made the number two the formal principle of lines, three that of planes, and four that of solids. This doctrine, however, is that which was found to be a characteristic of the theory or theories resumed in *De Anima* 404 B 18-24. As it is distinguished from the "orthodox" theory of ideas in 1036 B 13-15, so in 1090 B 20-32 it is clearly differentiated not only from the doctrine of Speusippus which precedes it (1090 B 13-20) but also from that of Plato to which Aristotle next refers (1090 B 32-1091 A 3); and that Aristotle means to ascribe it to Xenocrates is made certain by a comparison of his criticism here (1090 B 27-32) with *Metaphysics* 1028 B 24-27, 1080 B 28-30, 1083 B 1-8, 1086 A 5-11 (for Speusippus, Xenocrates, and Plato in 1090 B 13-1091 A 3 see also Appendix I, pages 481-485 *supra*). Heinze (*Xenokrates*, p. 172) properly prints *Metaphysics* 1090 B 20-32 as a fragment of Xenocrates (*frag.* 38); but, having done so, he should have seen that the οἱ μὲν αὐτογραμμὴν τὴν δυάδα of 1036 B 14 must also mean Xenocrates and that *De Anima* 404 B 18-24, since it contains the doctrine of these two passages, must also refer to Xenocrates and to a doctrine of Xenocrates which, according to Aristotle, Plato did not share. In that case, however, this doctrine could not have been recorded in the περὶ τἀγαθοῦ, since that was a résumé of Plato's lecture, but might very well have been discussed in the περὶ φιλοσοφίας. Now,

the only reason given by Robin for refusing to take the introductory words of the *De Anima* passage (404 B 19: ἐν τοῖς περὶ φιλοσοφίας λεγομένοις) as a reference to this latter work is the statement which he repeats after Heitz that Aristotle never refers to his own dialogues (*Idées et Nombres*, note 273, IV). This statement, however, in itself hardly an argument at all, is refuted by *Physics* 194 A 36, which is now generally admitted to be just what it purports to be, a direct and genuine reference to the περὶ φιλοσοφίας (cf. Hicks, *Aristotle De Anima*, p. 222 [on 404 B 19]; von Arnim, *Wiener Studien*, XLVI [1927-28], pp. 6-8, Ross, *Physics*, p. 509; Walzer, *Aristotelis Dialogorum Fragmenta*, pp. 96-7, and see note 77, page 119 *supra*). Moreover, there is additional and hitherto unnoticed support for taking these words of the *De Anima* in the natural way in which Themistius does take them, as a reference to the περὶ φιλοσοφίας, for, as we have already seen (note 77, page 120 *supra*), Pseudo-Alexander (*Metaph.*, p. 777, 17-20) and Syrianus (*Metaph.*, p. 154, 10-13) in commenting on another passage of the *Metaphysics* outline the doctrine described by Aristotle in 1090 B 21-24 and, although they have both erroneously added an ascription to Plato, their ultimate source, Alexander, must be responsible for the information which they repeat that this doctrine (which, we have seen, is involved in *De Anima* 404 B 18-24) was recounted by Aristotle in the περὶ φιλοσοφίας.

That the same doctrine is involved in *Metaphysics* 1090 B 20-32 and in *De Anima* 404 B 18-27 has long been recognized (cf., among others, Zeller, *Plat. Stud.*, pp. 237-8 and *Phil. Griech.*, II, 1, p 949, n. 2, Bonitz, *Metaphysica*, pp. 581-2; Rivaud, *Problème du Devenir*, n 852; Heinze, *Xenokrates*, pp. 57-8; Rodier, *Traité de l'Ame*, II, p. 61; Hicks, *De Anima*, pp. 222-3 [on 404 B 19-20]; Stenzel, *Zahl und Gestalt*, pp. 8-9 and 94-98; Ross, *Metaphysics*, II, p. 481). Yet of those who recognized this fact some, assuming that the passage of the *De Anima* refers to Plato, took it for granted that the passage of the *Metaphysics* must also be a report of Plato's doctrine (so Zeller, Rivaud, Rodier, Stenzel, and apparently Hicks, who does not, however, clearly commit himself). Even those who have seen that the passage of the *Metaphysics* refers to Xeno-

crates whose doctrine is here distinguished from that of Plato have, nevertheless, shrunk from drawing the necessary conclusion concerning the passage of the *De Anima* (Bonitz and Heinze, *loc. cit.*, Ross, *Metaphysics*, I, pp. lxx f. and lxxvi, n. 2) and have thus involved themselves in an implicit contradiction Robin alone seems to have sensed the logical consequence of the fact that *Metaphysics* 1090 B 20-32 refers to Xenocrates; and he tries to evade the consequence by denying the parallelism of that passage with *De Anima* 404 B 18-27 on the ground that the latter passage says nothing of the *generation* of magnitudes from the numbers, an argument so flimsy that it would not merit discussion even if it were not refuted by the fact that nothing is said of the *generation* of magnitudes in 1036 B 14 (οἱ μὲν αὐτογραμμὴν τὴν δυάδα) either, a passage which Robin himself asserts to have the same reference as 1090 B 20-32, i. e. Xenocrates (*Idées et Nombres*, n. 272, III [p. 296]) and which by itself would consequently prove that the *De Anima* passage refers to Xenocrates and not to Plato

The interpretation of *De Anima* 404 B 18-27 as a report of Xenocrates' doctrine agrees with the evidence from other sources according to which he called the monad νοῦς (Xenocrates, *frag.* 15) and apart from the νοῦς, which in this context he apparently identified with the "primary god" (*ibid.*), adopted (*frag.* 5) a triple classification of psychical faculties—ἐπιστήμη, δόξα, and αἴσθησις—to each of which corresponded a distinct class of objects (It is possible that from the point of view of human psychology Xenocrates may have identified νοῦς and ἐπιστήμη with the two kinds of φρόνησις which he assumed, i. e. with θεωρητική and πρακτική respectively [cf. *frag.* 6 and see note 14 and pages 67-68 *supra*]) Heinze is quite right in denying that this triad can be reconciled with any Platonic scheme (*Xenokrates*, p. 3, n. 3). Since he persists in taking the passage of the *De Anima* to refer to Plato, however, he has no recourse save to say that Aristotle "sich hier ungenau ausgedrückt hat"; but, once it is recognized that the passage is meant to refer to Xenocrates and not to Plato, the "problem" is resolved Direct evidence that Xenocrates identified ἐπιστήμη, δόξα, and αἴσθησις with the numbers two, three, and four respectively is lacking, but this identification does occur in several

passages which, ascribing it to Pythagoras or the Pythagoreans, show other traces of Xenocratean doctrine e. g Aëtius, I, 3, 8 = *Dox. Graeci*, pp 280 A 17-283 A 15 (n. b μονὰς and ἀόριστος δυάς [see pages 85-88 and Appendix I, pages 479-481 *supra*], μονάς = νοῦς and θεός, the verse on the tetractys which Xenocrates apparently cited for his use of the term ἀέναον [cf. Xenocrates, *frag.* 28 and see Appendix I, pages 484-485 *supra*]; for the ascription to Pythagoras of specifically Xenocratean doctrine cf. Aëtius, IV, 2, 3) and Theon Smyrnaeus, p. 98, 1-9 (in a long exposition of the tetractys and decad [pp. 93, 17-106, 11], a conglomerate of various material drawn from Posidonius [cf. p. 103, 18] and Eratosthenes [cf p. 105, 14] and works ascribed to Archytas and Philolaus [cf p. 106, 10-11]; for specific Xenocratean notions cf pp. 99, 24-100, 12 with Xenocrates, *frag.* 12 and pp. 100, 20-101, 6 with Xenocrates, *frag.* 23).

Even apart from this external evidence concerning the doctrine of Xenocrates, however, open-minded and careful consideration of the text of the *De Anima* itself should have dispelled the prejudice that 404 B 18-27 was intended by Aristotle to refer to Plato, a prejudice which really derives from the tendency of the eclectic and Neo-Platonic interpreters to dissipate or " reconcile " all differences among members of the Academy in so far as they were at all aware of such differences (cf Zeller, *Phil. Griech.*, III, 2, pp. 805-7 and pp 741-2, 799, n. 3). Since Aristotle passes from Empedocles to Plato with the phrase τὸν αὐτὸν δὲ τρόπον (404 B 16), there is no formal difficulty in understanding ὁμοίως δὲ καὶ . . . διωρίσθη (404 B 18-19) as a similar transition from Plato to someone else If it were not such a transition, however,—if the following passage were meant to be a citation of other pronouncements of Plato for the purpose of proving that in the *Timaeus* like is really known by like as Aristotle has already asserted (404 B 16-18, cf the last sentence of Robin's note 274, I [*Idées et Nombres*, p 310]),—Plato would here be said to have identified knowledge with the number two because it proceeds in a straight line (404 B 22-23). Is it not, then, strange that in the next chapter Aristotle, when he criticizes Plato for identifying the process of the mind with rotation (407 A 22-34), does not in any way intimate that Plato himself contradicted that identification? Or, since after

taking pains to prove that for Plato the mind is a physical circle the rotation of which is thinking (407 A 19-22) Aristotle then seeks to refute this identification by arguing that demonstrations proceed in a straight line (n. b. 407 A 29: εὐθυπορεῖσιν), is it not obvious that he had not meant in the previous chapter to ascribe to Plato the identification of knowledge with the number two? Moreover, whoever may be the author of the theory or theories cited in 404 B 18-27, Aristotle's purpose in writing these lines is beyond dispute. They are meant to support by example his contention that the soul when treated as cognitive had always—save in one case—been identified with the constitutive principles assumed for the universe (cf. 404 B 8-10, 405 B 12-21). The principles of which he speaks in these lines, however, are numbers; consequently in this example, if it is to serve the purpose intended, he must mean that the soul is number, just as he has maintained that Empedocles made the soul consist of all the elements which he assumed and made each one of these elements soul (404 B 11-15, cf. *Crit. Pres. Phil.*, p. 293). If, then, 404 B 18-27 were meant to refer to Plato, Aristotle would here be ascribing to him the doctrine that soul is number; but, whereas modern scholarship has sometimes gone so far and "reconciled" Plato and Xenocrates on this point (cf. Moreau, *La Construction de l'Idéalisme Platonicien*, p. 400 [. . . "la définition platonicienne de l'âme, transmise par Xénocrate"] and *L'Ame du Monde*, p. 52 ["Il est indéniable que l'Ame suivant Platon est un objet mathématique, ou comme dit Xénocrate un nombre"]), not only does Aristotle never do so but, further, in *De Anima* 408 B 30-409 A 1 he indicates that he considers the identification of soul with number peculiar to the theory that soul is self-moving number, i. e. the theory of Xenocrates (see pages 396-399 and note 321 *supra*; n. b. ἴδια [*scil.* ἀδύνατα] δ' ἐκ τοῦ λέγειν αὐτὴν ἀριθμόν), in *De Anima* 407 A 6-10 he shows that he did not understand soul in the *Timaeus* to be number in any sense (see pages 393 and 400-401 *supra*), and in *Topics* 140 B 2-6 he declares that Plato's definition of soul and that which makes soul number are incompatible (see page 12 *supra*). Since, then, Aristotle never ascribes to Plato the notion that soul is number but instead sets this notion in contrast to Plato's definition and since his criticism of

soul as number occurs only as part of his specific criticism of Xenocrates (cf. especially 409 A 7-10 [note 323 *supra*] and 409 B 13-18 [page 398 *supra*]), it is only reasonable to suppose that 404 B 18-27 too was meant to refer not to the doctrine of Plato but to that of Xenocrates. This supposition is supported by the following sentence (404 B 27-30), where Aristotle says that the definition of the soul as self-moving number, i. e. Xenocrates' definition, arose from the opinion that the soul is both the motive principle and γνωριστικὸν οὕτως. In this phrase, which is Aristotle's explanation of the motivation for the "number aspect" of the definition, οὕτως cannot mean *merely* τῷ ἐκ τῶν στοιχείων εἶναι (so Rodier and Hicks *ad loc.*) or τῷ ὁμοίον ὁμοίῳ, for these in Aristotle's eyes are the underlying principles of *all* the theories which he is treating (cf 405 B 12-21) and would not be any distinctive motivation for making the soul number; it must then mean "in the fashion thus explained" (so apparently Taylor, *op. cit.*, p 111: "cognitive in these ways"), and consequently it indicates that 404 B 18-27 has been adduced to prove that the general thesis concerning all theories which treat the soul as cognitive is true also for Xenocrates' doctrine that the soul is number. (Robin [*Idées et Nombres*, n. 431, 1 on pp. 488-9] wishes to take οὕτως with κινητικόν as well as with γνωριστικόν. This is improbable, because that of which κινητικὸν ἐδόκει is the motivation is the aspect of *self-motion* and this is neither implied in the preceding exposition nor restricted to the doctrine here considered [cf. 404 A 20-25 for Aristotle's account of the motivation of the soul as self-moving]. So far as Aristotle's evidence goes, then, the aspect of number in Xenocrates' definition has nothing to do as such with the *motion* of the soul; and there is consequently no support for Robin's statement that by "number" in this definition is symbolized the correlation of movement and intellection [*Idées et Nombres*, p. 488; see note 325 *supra*]. In fact, Plutarch's account implies that in Xenocrates' opinion number of itself could not "symbolize movement" at all [*De An. Proc.* 1012 F = Xenocrates, *frag.* 68· . . . τοῦτον δὲ μήπω ψυχὴν τὸν ἀριθμὸν εἶναι· τὸ γὰρ κινητικὸν καὶ τὸ κινητὸν ἐνδεῖν αὐτῷ]. Nevertheless, in holding that the οὕτως in 404 B 28, whether it modifies both κινητικόν and γνωριστικόν or only the latter, refers specifically to

he account in 404 B 18-27 Robin unwittingly admits that this passage must be an exposition of Xenocrates' doctrine and not of Plato's)

De Anima 404 B 18-27 cannot be adduced, then, as evidence of he way in which Aristotle understood Plato's doctrine of the soul or any doctrine of Plato himself. Furthermore, the passage gives no indication that in the theory to which it refers the soul was treated as " intermediate "; if it was so treated, Aristotle either was unaware of it or at least here was unconcerned with hat aspect of the theory. In this passage 404 B 24-27 is not an integral part of Aristotle's " report "; that report is contained in the preceding lines, and this is an explanation whereby Aristotle justifies the inference which he is drawing, namely that in this theory too the soul because it was considered as cognitive was constructed of the elements assumed for the universe (n b. the γὰρ of 404 B 24, which introduces an explanation in support, and cf Robin, *Idées et Nombres*, n 274 [p. 309] who says that 404 B 24-27 " est destiné à donner un ensemble d'explications complémentaires "). Of this explanation, κρίνεται δὲ τὰ πράγματα τὰ μὲν νῷ, τὰ δ' ἐπιστήμῃ, τὰ δὲ δόξῃ, τὰ δ' αἰσθήσει obviously resumes and applies 404 B 21-24; and εἴδη δ' οἱ ἀριθμοὶ οὗτοι τῶν πραγμάτων is the conclusion the numbers with which the cognitive faculties are identified are the formal principles of the objects of these faculties. Then the first clause, οἱ μὲν γὰρ ἀριθμοὶ τὰ εἴδη αὐτὰ καὶ αἱ ἀρχαὶ ἐλέγοντο, εἰωὶ δ' ἐκ τῶν στοιχείων, must be an interpretative résumé of 404 B 18-21. The résumé consequently shows that 404 B 18-21 has to do with the constitutive principles of the universe as objective existence and 404 B 21-24 with these same principles as factors of the soul and that these two sentences refer to two different aspects of one theory, not to two different theories (as Taylor supposes, *op. cit.*, p. 111) or to alternative expressions of the same notion (so Zeller, *Plat. Stud.*, p. 272, n. 1 and Rodier, *Traité de l'Ame*, II, p 57). Since 404 B 18-27 does not refer to Plato at all, the introductory phrase of 404 B 21-24, ἔτι δὲ καὶ ἄλλως (*scil.* διωρίσθη), cannot, of course, " mark a third exposition coordinate with τὸν αὐτὸν δὲ τρόπον and ὁμοίως δὲ καὶ κ. τ. λ." (as is asserted by A B Cook, *The Metaphysical Basis of Plato's Ethics*, p. 31); it was recognized by the ancient commentators as marking another aspect of the theory to which

404 B 18-21 refers (Themistius, *De Anima*, p 12, 5; Philoponus, *De Anima*, p 79, 20-21; Simplicius, *De Anima*, p. 29, 25-27), and it really means, "and moreover it has been set forth besides that . . ." (cf Stallbaum, *Platonis Parmenides*, p. 280). This phrase and the fact that Aristotle thought it necessary to justify his interpretation by the explanation given in 404 B 24-27 indicate that the two aspects here brought together did not occur together in the theory concerned and that the author of the theory, Xenocrates, did not himself expressly base his identification of soul with number on the principle that the cognitive subject must consist of the elements which constitute the objects of cognition.

The foregoing analysis also proves that neither αὐτὸ τὸ ζῷον nor τὰ ἄλλα in 404 B 19-21 can have been meant to signify the *subject* of cognition, as in one way or another they interpret who suppose 404 B 18-21 and 404 B 21-24 (or, usually, 404 B 21-27) to be merely alternative expressions of the same notion (e g. Zeller, *Plat. Stud.*, p. 272, n 1, A. B. Cook, *op. cit.*, pp. 36-38 [also Jackson and Wallace cited by Cook, pp. 34-35], Rodier, *Traité de l'Ame*, II, p 57) The meaning of αὐτὸ τὸ ζῷον here, where the doctrine concerned is that of Xenocrates and not of Plato, can obviously not be surely determined by referring, as many commentators do, to the *Timaeus*, in default of direct evidence, however, one might justify the presumption that "the idea of living being" had the same meaning for Xenocrates as for Plato (allowance always being made for the former's identification of ideas and mathematical numbers), and one would certainly expect that if Aristotle used the term αὐτὸ τὸ ζῷον in reference to Xenocrates as well as to Plato he intended it to signify a similar conception in the doctrines of both. Now, in the *Timaeus* the physical universe is called a ζῷον and as such is said to have as its model τὸ τέλεον καὶ νοητὸν ζῷον or τὸ ὃ ἔστι ζῷον which comprises all the νοητὰ ζῷα (*Timaeus* 30 B-31 A, cf 39 E); both in Plato's terminology and in Aristotle's understanding of it this ὃ ἔστι ζῷον has the same significance as would the term αὐτὸ τὸ ζῷον or αὐτὸ ζῷον (see note 211 *supra*). As was long ago pointed out, however, the fact that the world is called a ζῷον does not imply the identity of ζῷον and κόσμος and so does not justify those who by referring to the

Timaeus conclude that in the *De Anima* αὐτὸ τὸ ζῷον signifies "the ideal world" (cf. Zeller, *Plat. Stud.*, p. 272, n. 1 against Brandis and Trendelenburg [cf. Hicks, *De Anima*, p. 222, where on 404 B 19 αὐτὸ τὸ ζῷον is said to be "the universe"]). Furthermore, in the *Timaeus* itself there is no support for the notion that the τέλεον καὶ νοητὸν ζῷον is "the idea of the whole," "the unity of all the ideas," or "the complete system of εἴδη." To be sure, Plotinus did so interpret it (e. g. *Enn.* V, 9, 9: ἀνάγκαιον . . . κόσμον νοητὸν τοῦτον τὸν νοῦν εἶναι, ὃν φησιν ὁ Πλάτων ἐν Τιμαίῳ ὃ ἔστι ζῷον); and one form or another of this interpretation is subscribed to by most of the modern writers on Plato, among whom it is sufficient to name by way of example Taylor (*A Commentary on Plato's Timaeus*, pp. 80-81), Rivaud (*Timée* [*Platon, Œuvres Complètes*, X], p. 33), Natorp (*Platos Ideenlehre*, p. 360), Wilamowitz (*Platon*, I, p. 598), Stenzel (*Studien*, p. 117; *Zahl und Gestalt*, p. 116), Robin (*Platon*, p. 197), and Moreau (*L'Ame du Monde*, pp. 7, 10, and 35-39), though the most serious attempt to "prove" that the τέλεον καὶ νοητὸν ζῷον is "the intelligible world" was made by J. Horowitz (*Das platonische* νοητὸν ζῷον *und der philonische* κόσμος νοητός, pp. 20-28). The chief positive argument of Horowitz, as of all who try to cite evidence for a similar interpretation, is that the ζῷον which is the model of the world is called the "fairest of all that is comprehended by means of thought and that which is in every respect complete." The passage which is thus interpreted runs: τῷ γὰρ τῶν νοουμένων καλλίστῳ καὶ κατὰ πάντα τελέῳ μάλιστα αὐτὸν ὁ θεὸς ὁμοιῶσαι βουληθεὶς ζῷον ἓν ὁρατὸν . . . συνέστησε (*Timaeus* 30 D 1-31 A 1). It is the concluding sentence in answer to the question τίνι τῶν ζῴων αὐτὸν εἰς ὁμοιότητα ὁ συνιστὰς συνέστησεν (30 C 3), and Proclus was obviously right in understanding τῶν νοουμένων to mean τῶν νοουμένων ζῴων (*In Timaeum* 132 B [= I, p. 434, 10-14, Diehl]) Here, then, the completeness of the model ζῷον consists in its comprisal *not* of all ideas or all real beings but simply of all sub-generic and specific ideas of "living being." This is confirmed by *Timaeus* 39 E-40 A where the exhaustive catalogue of sub-genera included in the ὃ ἔστι ζῷον contains just four ideas: the class of gods and the three classes called πτηνόν, ἔνυδρον, and πεζὸν καὶ χερσαῖον (cf. the

same classification in the Διαιρέσεις Ἀριστοτέλους, § 64, where ζῷον is just τὸ κοινῶς κατὰ πάντων τούτων κατηγορούμενον [see note 15 *supra*]). Horowitz's contention that plants are included in the fourth sub-genus is irrelevant, for even so the classification is not an indication of "the idea of the four elements in 'the spiritual living being'." On the contrary, *Timaeus* 41 B-D and 69 B-C show definitely that Plato did not think of fire, water, etc as members of the four classes of ζῷα and so could not have intended to include the ideas of fire, water, etc. (cf. 51 B-E) among the πάντα ὅσσα νοητὰ ζῷα embraced by the ὃ ἔστι ζῷον. This very terminology indicates that "the complete, intelligible ζῷον" is simply the most general "idea of living thing," the idea of ζῷον in the same sense that the single idea of each plurality is called by Plato ὃ ἔστιν ἕκαστον (*Republic* 507 B, cf. *Phaedo* 78 D). Such is the interpretation of Shorey (*A. J. P.*, X [1889], p. 50; *Unity*, n. 256; *Class. Phil.*, XXIII [1928], p. 351 on 30 C and p. 344) and Cornford (*Plato's Cosmology*, pp 40-41) and apparently was that of Zeller also (cf. *Phil. Griech.*, III, 2, p. 585, n. 1) That it is "logically correct" is admitted even by Erich Frank, whose attempt to avoid the necessary conclusion by arguing that "the standard of exact logic cannot be applied to the myth" (*A. J. P.*, LXI [1940], p 45, n. 13) is of no cogency since the method which leads to the ὃ ἔστι ζῷον in the *Timaeus* is not "mythical" but is the regular logic of the theory of ideas; Frank's appeal to *Sophist* 248 E is also mistaken, for that passage proves *not* that "the idea of the 'perfect being' is considered to be a living being" but simply that the totality of the real embraces motion and what is in motion as well as what is immobile (248 E 6-249 D 5 [especially 249 B 2-3 and 249 D 2-5] and cf 250 A 8-C 8 with Cornford, *Plato's Theory of Knowledge*, pp. 250-1). Aristotle, moreover, wherever he uses the term αὐτοζῷον or αὐτὸ τὸ ζῷον in reference to the theory of ideas means unmistakably the "idea of living being" or, as he would put it, the separated genus of animality (*Topics* 137 B 8-13, 143 B 29-32, *Metaphysics* 1039 B 9-16, 1045 A 14-22, 1085 A 23-29; *frag.* 189 = Alexander, *Metaph.*, p 98, 12-16 [from the περὶ ἰδεῶν, see Appendix VII *supra*]); and so Alexander also understood the term (cf.

ɔecially *Metaph.*, pp. 105, 2-27 and 124, 16-20). Both the ɛsumption, then, that by the term αὐτὸ τὸ ζῷον Xenocrates ɔuld mean to express the same notion as had Plato and the ablished consistency of Aristotle's usage elsewhere make it ghly probable that in *De Anima* 404 B 19-21 also αὐτὸ τὸ ζῷον ɛans just "the idea of living being" Nevertheless, it is erpreted as ὁ κόσμος ὁ νοητός by Themistius in the passage in ıich he refers to the περὶ φύσεως of Xenocrates (*De Anima*, 11, 27-12, 4; see page 567 *supra*). It is consequently pos-ıle that Xenocrates may have given this meaning to the ὃ ἔστι ɔv of the *Timaeus*, but it is equally possible and somewhat ɔre probable that Themistius found the term αὐτὸ τὸ ζῷον used thout explanation in the work of Xenocrates and on his own thority gave it the interpretation which had been made current the Neo-Platonists The phrase τὰ δ' ἄλλα (*De Anima* 404 21) which complements αὐτὸ μὲν τὸ ζῷον is not to be interpreted any case either as τὰ λοιπὰ τῆς τῶν γνωστῶν διαιρέσεως, τὰ ἐπιστητὰ δοξαστὰ τὰ αἰσθητά (Simplicius, *De Anima*, p 29, 20-21, llowed by Robin, *Idées et Nombres*, n 273, III [pp 305-) or as τὰ ἄλλα ζῷα (Zeller, *Phil. Griech.*, II, 1, p 758, n 4, llowed by Rodier, *Traité de l'Ame*, II, p. 56) It means nply "the other ideas" (i e. αὐτὰ τὰ ἄλλα), those other an the idea of living being (cf Philoponus, *De Anima*, p. 79, -16 [ἢ τὰ ἄλλα παραδείγματα, οἷον τὸ αὐτοκαλόν, τὸ αὐτοάνθρωπος, ὶ ἐπὶ τῶν λοιπῶν ὁμοίως] with his reference to the variant, τὰς δὲ λας [i. e. τὰς ἄλλας ἰδέας] which Themistius also read [*De ıima*, p 11, 20]); even if αὐτὸ μὲν τὸ ζῷον were interpreted as νοητὸς κόσμος, the phrase τὰ δ' ἄλλα would still have to mean st the specific ideas embraced by it (so Themistius, *De Anima*, 12, 1-4 where τὰ ἐπὶ μέρους means "specific ideas," as the llowing τὰς ἰδέας proves, and does not represent an interpreta-ɔn similar to that of Simplicius as Robin believes it does).

Aristotle represents this theory, then, as one which identified e cognitive or perceptive faculties of the soul with numbers, hich numbers are in turn formal principles of the objects of ıese faculties. Far from so much as suggesting that the soul in any way "intermediate," he asserts its identity with idea-ımbers and implies that its στοιχεῖα are identical with theirs.

So much would still be clear even if Robin were not mistaken in supposing the passage to refer to Plato and in interpreting αὐτὸ τὸ ζῷον to mean the world of ideas as a whole (*Idées et Nombres*, n 273, III [p. 305], p. 480, p. 594, *Platon*, p. 145 [so also Stenzel, *Zahl und Gestalt*, p. 95]).

As evidence in Aristotle's writings for the intermediacy of the soul in Plato's theory Robin adduces, besides the foregoing passages, what he supposes to be Aristotle's implicit admission of an " intermediate ζῷον " in the Platonic system; and with this as his only support he develops a fanciful reconstruction of a model of the sensible world intermediate between it and the world of ideas or αὐτοζῷον, the soul of which intermediate ζῷον he declares to be the Platonic world-soul (*Idées et Nombres*, pp. 483-4 and 594-5) Aristotle, however, asserts that the intermediate entities which he ascribes to the Platonic theory are posited as the objects of mathematical science (*Metaphysics* 997 B 2-3, 995 B 16-18, 992 B 16-17) and are immobile (*Metaphysics* 987 B 14-18); and the passages in which he argues that consistency would demand of this theory the assumption of other intermediates, instead of implying as Robin suggests (*op. cit.*, n. 422) that it did admit *one* intermediate living being, state that it admitted *none* and that it could not do so since on its own premises any such intermediate must be immobile (see note 194 [page 291 *supra*] on *Metaphysics* 997 B 12-24, 1059 B 3-9, 1076 B 39-1077 A 9 and notice especially 997 B 19-20 and 1077 A 1-4 [see also page 99 *supra* on 998 A 2-4]). Some later ancient interpreters appear to have identified the soul as intermediate with these intermediate mathematicals (cf. Plutarch, *De An. Proc* 1023 B-C, on the Posidonians, and Proclus, *In Timaeum* 187 A = II, p 153, 18-19, Diehl; see Appendix V [pages 510-511 *supra*] against the supposition that such was the reasoning of either Speusippus or Xenocrates); but Aristotle never makes such an identification, and it is clear that he did not in any way connect the nature of the soul in Plato's theory with the intermediacy of the mathematical entities, for not only does his treatment distinguish the latter as immobile from the former as mobile but, while he asserts that Plato constructed the soul from certain principles, he denies that those

ho posited the intermediates ever said or could say how r from what there could be such intermediate existence *Metaphysics* 1090 B 32-36).

It is unnecessary to consider here the nature of Robin's reconruction or its relation in detail to the various remarks of ristotle which he adduces and to the writings of Plato which e does not consider; it is sufficient that no Aristotelian passage in be cited in which there is any reference, explicit or implied,) Plato's notion that the soul is " intermediate."

APPENDIX X

Note 344 on Page 414

The circular motion of the fifth essence is really incompatible with the conception of natural motion as the movement of a body from an alien place to its proper place in which it rests without constraint (cf. *De Caelo* 276 A 22-26, *Physics* 212 B 33-34, *De Anima* 406 A 24-25). Granting that the fifth essence has place—although the strict consequence of Aristotle's definition of place is that it has none and so should have no motion (*Physics* 212 A 31-32, 212 B 7-8; cf. Simplicius, *Phys.*, pp. 588, 3-9 and 595, 16-26)—, if it is in its proper place, it should be at rest (cf. Baudry, *Atticos*, p. 24 = Eusebius, *Praep. Ev.*, XV, 8, 10). Of this difficulty Aristotle seems to be aware when he offers the explanation that, while all things stop moving when they come into their proper places, for the body the motion of which is circular the point of initiation and the goal of movement are the same place (*De Caelo* 279 B 1-3). This only means, however, that in its proper place there are no local distinctions to serve as the termini of motion (cf. *De Caelo* 228 A 22-27, *Physics* 265 A 27-B 8 and B 11-16); and this would also be true within the sphere which is the proper place of fire, for example, so that on this reasoning fire too within its own sphere could move in a circle and this motion would be *neither* natural *nor* contrary to nature since it would be movement neither to its proper place nor away from it. Aristotle himself unwittingly implies this when in his discussion of place he asserts that if the whole universe were water it would as now have circular motion (*Physics* 212 A 32-B 3). Elsewhere too he distinguishes circular motion from motion κατὰ φύσιν as well as from motion παρὰ φύσιν (*De Caelo* 288 A 20-23) On the other hand, his demonstration that the heavenly bodies cannot be fire because fire cannot have circular motion even παρὰ φύσιν is an equivocation. Circular motion cannot be παρὰ φύσιν for fire, he maintains, because a thing can have only one contrary and the contrary to the natural motion of fire is downward motion (*De Caelo* 269 A 9-14). Yet he goes on to argue that circular

notion, since it is παρὰ φύσιν for the simple bodies of our nvironment, must be κατὰ φύσιν for some other body (*De Caelo* 69 A 32-B 2). The commentators point out that in the latter assage παρὰ φύσιν must mean not "contrary to nature," since his would contradict the principle ἓν ἑνὶ ἐναντίον of 269 A 9-10, ut simply "other than natural" (Simplicius, *De Caelo*, p. 52, -18; Guthrie, *Aristotle On the Heavens* [L. C. L.], p. 17, ote). In that case, however, the previous conclusion is false, or fire can have circular motion παρὰ φύσιν which is still not ontrary to its natural motion (cf. Simplicius' explanation of he circular motion mentioned in *Meteorology* 344 A 11-13 as motion ὑπὲρ φύσιν [*De Caelo*, pp. 21, 14-25 and 51, 14-28]). The root of Aristotle's difficulty is his conception of natural notion; circular motion, as motion of a thing from itself to tself (*Physics* 264 B 18-19), cannot be brought within the imitations of natural motion and motion contrary to nature so ong as these are defined by proper and alien place (*De Caelo* 276 A 10-12).

It is no less difficult to reconcile the circular motion of the ifth essence with the definition of motion as the actualization of he potential *qua* potential. The definition implies that every notion is the passage of a subject between opposite termini vhich are different in kind and are to each other as privation ind form (*Physics* 201 A 3-15 [see also note 341 *supra*], *De Caelo* 277 A 14-23). Natural motion is, then, explained on this asis as the passage of a body to its own form or actuality (see ages 413-414 *supra*). Circular motion, however, can have no uch termini; and Aristotle's attempt to overcome this difficulty y asserting that even circular motion takes place between pposites "in a sense" (*De Caelo* 277 A 23-26) is an obvious ailure, for these so-called opposites, the diametrically opposed oints on the circle, do not differ from each other in kind· as Aristotle himself says elsewhere, there is no ἀρχή, μέσον, or πέρας f circular motion (*De Caelo* 288 A 22-27) or every moment in uch motion is equally ἀρχή, μέσον, and τέλος (*Physics* 265 A 32-B 1). It is, in fact, this very characteristic which, conflicting as t does with his general analysis of motion, makes circular notion capable of the continuity and eternity required by his cosmology (*Physics* 264 B 9-265 B 16, cf. 252 B 28-253 A 2).

Yet, if this motion is continuous because it can never reach its τέλος (*Physics* 265 B 2-8 and 11-16), it would seem that the continuity is a frustration which would render the rotation of the fifth essence ἀπίπονος, in spite of the contention that this difficulty in which other theories are involved is avoided by assuming a simple body to which circular motion is "natural" (*De Caelo* 284 A 14-18). At *Metaphysics* 1050 B 20-28 Aristotle admits that continuous motion is laborious; but he says that the cause of this laboriousness is the potentiality of the thing in motion not its actuality (cf. 1074 B 28-29) and that the eternally continuous motion of the heavenly bodies is effortless because it does not involve the potentiality of its opposite: the eternal *mobile* has no potentiality of motion but only of position or direction (οὐκ ἔστι κατὰ δύναμιν κινούμενον ἀλλ' ἢ ποθὲν ποί). For the fifth essence, then, motion itself is actuality. This solution, however, apart from its questionable restriction or, rather, practical elimination of the material aspect of the fifth simple body (cf. *Metaphysics* 1044 B 6-8, 1069 B 25-26, 1042 B 5-6; Le Blond, *Logique et Méthode chez Aristote*, pp. 425-6), is in two respects incompatible with Aristotle's doctrine of motion. In the first place, it contradicts the definition which makes all motion the passage of a subject to actuality and so an "incomplete actuality" since so long as anything is in motion it must comprise an element of potentiality which has not yet been actualized (*Physics* 201 B 27-202 A 3, *Metaphysics* 1048 B 28-35, *De Anima* 417 A 16-17; see pages 384-5 and 413 *supra*); the refutation of integral self-motion assumes that no *mobile* can be such as the fifth essence is here declared to be (*Physics* 257 B 6-9; κινεῖται τὸ κινητόν· τοῦτο δ' ἐστὶν δυνάμει κινούμενον, οὐκ ἐντελεχείᾳ, τὸ δὲ δυνάμει εἰς ἐντελέχειαν βαδίζει, ἔστιν δ' ἡ κίνησις ἐντελέχεια κινητοῦ ἀτελής). In the second place, if this body is in motion without having the potentiality of motion and rest, the prime mover would in no way cause its motion but only the *direction* of its motion, since this is the only potentiality for actualization that it has. In short, the fifth essence would be a self-mover.

These are logical difficulties inherent in Aristotle's analysis of motion and his doctrine of natural motion; and they remain, whatever the chronological development of his theory may have been, as is amply proved by the fact that the passage which in

ffect makes a self-mover of the fifth essence (*Metaphysics* 1050 ; 20-28) occurs only a few lines after a reference to the prime ıover as the ultimate origin of all actualization (1050 B 3-6). 'he incompatibility of these two statements cannot be explained way by assigning each of them to a different chronological :ratum.

Von Arnim, however, contended that Aristotle, when he rote the *De Caelo* and the cosmological works closely related) it, *De Generatione et Corruptione* and *Meteorologica*, really ıtended the motion of the fifth essence to be self-caused and ad not yet discovered the general principle, ἅπαν τὸ κινούμενον τό τινος κινεῖται, which brought with it the abandonment of self- ıotion and the assumption of an unmoved mover (*Die Entsteh- ng der Gotteslehre des Aristoteles*). W. K. C. Guthrie has ointed out the fallacy of von Arnim's general argument *op. cit.*, p. 11) that belief in an internal principle of motion xcludes the possibility of an external mover, but he too main- ains that in the *De Caelo* the fifth essence is the highest of all ntities and that its motion is self-caused (*Class. Quart.*, XXVII 1933], pp. 162-71; and, with slight variations, *Aristotle On he Heavens* [L. C. L.], pp. xv-xxxvi). W. D. Ross also holds ıat at the time of writing the *De Caelo* Aristotle still believed ı self-motion but a self-motion of immanent star-souls, not of ıe fifth essence itself (*Aristotle's Physics*, pp. 94-100); and Ioreau, who takes the *De Caelo* to be "animistic" in concep- ion, asserts that the unmoved mover does not appear in this ork and apparently ascribes self-motion to the principle which e says is here immanent in the universe (*L'Ame du Monde*, p. 114-29).

De Caelo 288 A 27-B 7, 288 B 22-30, 311 A 9-12, and 277) 9-10, which contain obvious references to a transcendent ıover or to the impossibility of self-motion, are eliminated as later additions" by von Arnim (*op. cit.*, pp. 18-21 and 22-23) nd Guthrie (*Class. Quart., loc. cit.*, p. 170; *Aristotle On the leavens*, pp. xxiii-xxv), who maintain that these are the only uch references in the work. Ross does not mention the last two ıassages at all; and he takes the first two as referring to mmanent souls (*op. cit.*, p. 98; cf. Moreau, *op. cit.*, p. 119, . 1), though both of these presume the "later" general

principle (cf. 288 A 27-28, 288 B 29-30) and so must mean by τὸ κινοῦν an external mover. According to Ross (*op. cit.*, p. 99) the earliest reference to the unmoved mover is that in *De Motu Animal.*, chaps 2-4 (698 B 8-27, 699 A 12-B 11, 699 B 32-700 A 6), and this is only a tentative argument from analogy (so also Guthrie, *Aristotle On the Heavens*, pp. xxvii f.). Of the passages in the *De Generatione et Corruptione*, Ross (*op. cit.*, p. 100) refers to 323 A 31-33 as a genuine suggestion concerning the action of the unmoved mover on the *primum mobile*; but von Arnim denies that the unmoved mover mentioned in 323 A 12-33 and 324 A 30-B 14 has anything to do with the motion of the heavens and maintains that 337 A 17-22 is the addition of a "later critical reader" (*op. cit.*, pp. 24-26). Guthrie says nothing of this work; but, since he recognizes the presence of the unmoved mover in *Physics* B, 198 A 35-B 4 (cf. also Ross, *op. cit.*, p. 100), he explains all references in the *De Caelo* to discussions in the *Physics* as cross-references "added to manuscripts already in existence" (*Aristotle On the Heavens*, pp. xxviii-xxix).

Von Arnim, Guthrie, Ross, and Moreau agree that *De Caelo* 279 A 30-B 3 excludes the possibility of a transcendent mover and that 284 A 18-B 5, although they interpret it differently in other respects, cannot be reconciled with the assumption of such a mover; von Arnim (*op. cit.*, pp. 21-22) and, with some hesitation, Guthrie (*Aristotle On the Heavens*, pp. xxi-xxii) cite 300 B 21-22 as evidence that Aristotle still held to the self-motion of the first mover; and Guthrie (*op. cit.*, pp. xxii-xxiii) adduces 309 B 17-18 as proving the same thing and 286 A 9-12 as saying that "the god must be characterized by eternal motion" and as identifying "the god" with the "first body" (cf. on this passage Moreau, *op. cit.*, pp. 118-19).

That 300 B 21-22 offers no evidence in this matter has already been shown (see note 307 *supra*). Neither does 309 B 17-18, where arguing against the Atomists' explanation of lightness as due to the *enclosed* void in bodies Aristotle says ἄτοπον δὲ καὶ εἰ διὰ τὸ κενὸν μὲν ἄνω φέρονται, τὸ δὲ κενὸν αὐτὸ μή (which means "but the void itself does not move upward" [cf. 309 B 18-19] not, as Guthrie translates, "does not move itself"). Aristotle is here considering an assumed cause not of *motion* but of *upward*

notion, and according to his own explanation composite bodies re light because the preponderating simple body in them itself noves naturally upward (cf. *De Caelo* 311 A 29-B 13); the ationale of the argument is made plain in *Physics* 216 B 33-.17 A 10 where it is used against the theory of a void diffused hrough bodies and at the time of writing which Aristotle must, ven according to Guthrie's thesis, have held the theory of an nmoved mover (see on 198 A 35-B 4 page 585 *supra*). That Aristotle's criticism in 284 A 18-B 5 does not exclude the ossibility of *all* animation of the heavenly bodies has already een observed (Ross [and Moreau, *op. cit.*, p. 115] against von rnim, Guthrie, and Bignone; see Appendix VIII, pages 540-41 *supra*); but neither does it necessitate the absence of a ranscendent mover from Aristotle's scheme, as is shown by the act that just after mentioning such a mover in *Metaphysics* 050 B 3-6 he establishes the effortless continuity of heavenly notion as a consequence of the nature of the fifth essence (i. e. ts lack of potentiality [see pages 583-584 *supra*]) and in the ourse of doing so refers again to his criticism of the theories vhich would make the maintenance of the heavens involve onstraint or weariness (1050 B 20-28).

The textual tradition of *De Caelo* 286 A 9-12 is divided on he crucial word; but Guthrie's use of the passage (*op. cit.*,). xxii) is not justified by the text which he himself prints and ranslates· ἕκαστόν ἐστιν, ὧν ἐστὶν ἔργον, ἕνεκα τοῦ ἔργου. θεοῦ δ' ἐνέργεια θανασία· τοῦτο δ' ἐστὶ ζωὴ ἀΐδιος. ὥστ' ἀνάγκη τῷ θείῳ (so J; θεῷ, E, iot recorded by Guthrie) κίνησιν ἀΐδιον ὑπάρχειν. ἐπεὶ δ' ὁ οὐρανὸς οιοῦτος (σῶμα γάρ τι θεῖον), διὰ τοῦτο ἔχει τὸ ἐγκύκλιον σῶμα, ὃ φύσει ινεῖται κύκλῳ ἀεί. Now, this text, printed by Guthrie, is supported)y the fact that σῶμα γάρ τι θεῖον is given as the justification for οιοῦτος, which could hardly have been used anyway if "the ieaven" were to be identified with "the god." In that case, iowever, it is not "god" but "the divine" that has eternal notion; and this eternal motion is not the same as the eternal ife of god This passage, introducing Aristotle's attempt at a ogical derivation of the various motions of the universe and heir subjects (286 A 3-B 9), is clarified by 292 A 18-B 25, a passage which none of the critics concerned has suggested is a "later addition" (Ross, *op. cit.*, p. 98; Guthrie, *op. cit.*, pp.

xxxiii-xxxiv; Moreau, *op. cit.*, p. 115; von Arnim, *op. cit.*, p. 18, who sees in it an attitude even nearer to the earlier dialogue, περὶ φιλοσοφίας, than the present form of *De Caelo* [cf Theiler, *Zur Geschichte der teleologischen Naturbetrachtung*, p. 85, n. 1]) and yet in which Guthrie himself recognizes a reference to the unmoved mover (*op. cit.*, p. 208, n. *a*). In this latter passage where the heavenly bodies are called divine (θεῖα σώματα in 292 B 32, cf. *Metaphysics* 1074 A 30-31) the first heaven is not the highest entity, for that needs no action to attain the good since it is itself the final cause whereas the first heaven requires motion to attain its end although, being nearest to the good, it requires only a single motion (292 A 22-24; 292 B 4-7, 10-13, 17-25). In the light of this passage 286 A 9-12 must mean that the final cause for god is his own actuality, which is eternal life, but what is divine partakes of the θειοτάτη ἀρχή (cf. 292 B 21 23) and thus having its final cause beyond itself can attain its end only by action, so that the heaven has its peculiar body in order that it may move continuously to approximate the eternal life of god. It is worth observing that at the end of this chapter (286 B 5) there is a reference pointing forward to *De Generatione* B, chap. 10 and that there the perpetuity of generation, the cause of which is the circular motion of the heavens, is said to be not truly οὐσία but only an approximation to it (336 B 27-337 A 1).

Of the passages in the *De Caelo* which are supposed to exclude the possibility of an unmoved mover or to imply self-motion there remains only 279 A 30-B 3 Here at 279 A 30-35 there is cited from the ἐγκύκλια φιλοσοφήματα a proof of the immutability of "whatever is the primary and highest divinity": οὔτε γὰρ ἄλλο κρεῖττόν ἐστιν ὅ τι κινήσει—ἐκεῖνο γὰρ ἂν εἴη θειότερον—οὔτ' ἔχει φαῦλον οὐθὲν οὔτ' ἐνδεὲς τῶν αὑτοῦ καλῶν οὐδενός ἐστιν (a résumé of the argument in *Republic* 380 D-381 C, as Simplicius says [*De Caelo*, p. 289, 14-26] whose reference to the περὶ φιλοσοφίας [*ibid.*, p 289, 1-2], however, though widely accepted, has no evidentiary value since he did not know that dialogue [see note 77 *supra*]). Since the subject of the following lines is certainly ὁ οὐρανός (279 B 1-3: καὶ ἄπαυστον δὴ κίνησιν κινεῖται εὐλόγως . . . [see page 581 *supra* and cf. especially *Physics* 265 A 27-B 8 there cited), it has been argued that it is the heaven which is

here declared to be "the primary and highest divinity" and to be unmoved by anything else (von Arnim, *op. cit.*, p. 15; Ross, *op. cit.*, p. 97; Guthrie, *op. cit.*, p. xxi and *Class. Quart.*, XXVII [1933], p. 168, Moreau, *op. cit.*, p 119, n. 1). This, however, would seem to prove too much, for, if οὔτε . . . κινήσει denies that the heaven is moved by anything else, οὔτ' ἔχει φαῦλον οὐθὲν οὔτ' ἐνδεὲς . . . ἐστιν would have to mean that it does not move itself either. The fact is that 279 A 30-35 is introduced to support Aristotle's argument for the immutability and impassivity not of the heaven but of the entities beyond the outermost motion (τὰ ὑπὲρ τὴν ἐξωτάτω τεταγμένα φοράν [279 A 20], showing that τἀκεῖ [279 A 18] cannot be the celestial bodies) which lead the best and most self-sufficient life and on whose everlasting being, which is the τέλος of the whole heaven, the life and being of all other things depend. This subject, suggested to Aristotle by his remark that there is no place, void, or time outside of the heaven, fills all of 279 A 18-35 which is a long but unified parenthesis. Nothing in this parenthesis leads to 279 B 1-3, and that passage on the ceaseless motion of the heaven has no connection with anything in 279 A 18-35 but does follow plausibly upon 279 A 17-18: since there is no place outside of the heaven, for the heavenly body the same place is at once the point of initiation and the goal of movement. There is consequently no need to deny or avoid the obvious fact that the object of κινήσει in 279 A 34 must be identified with the immutable entities *beyond* the heaven while the subject of κινεῖται in 279 B 1 is the heaven itself. There is then no denial here either of an external mover of the heaven; and, even though the "external entities" are not explicitly called "movers," the identification of the τέλος of the heaven with their everlasting being on which the being of all else depends (the antecedent of ὅθεν, 279 A 28, being not οὐρανός as Guthrie says [*Aristotle On the Heavens*, p. xxi, n. *a*] but the divine αἰών which is the τέλος of the whole heaven and the everlasting being of the "external entities"), especially when compared with 292 A 18-B 25 and 286 A 9-12 (see pages 586-587 *supra*), shows that Aristotle did at this time believe in some kind of causal relation between them and the heavens and makes this passage evidence rather for an unmoved mover than against it.

Furthermore, the scholars who would date Aristotle's abandonment of self-motion later than the *De Caelo* and the works contemporary with it have overlooked positive indications of the contrary even apart from those passages which they have questionably explained away as "later additions" (see pages 584-585 *supra*). It should have been observed, for example, that *De Generatione* 323 B 21-24 assumes both the impossibility of self-motion and the necessity of an unmoved mover in the universe and that in 326 B 2-5 the argument against integral self-motion is so succinctly stated as to imply that the reasoning on which it is based was well understood (see note 310 *supra*). Most instructive is *Rhetoric* 1369 B 33-35 which runs ὑποκείσθω δ' ἡμῖν εἶναι τὴν ἡδονὴν κίνησίν τινα τῆς ψυχῆς. This Bignone (*L'Aristotele Perduto*, I, pp. 208 and 271) considers to be proof that at this time Aristotle still held the Platonic doctrine of the soul as motion and of pleasure as a motion of the soul (see note 327 *supra*). Yet *Rhetoric* 1399 A 6-7 refers directly to *Topics* 111 B 4-8 for the argument to show that soul cannot move at all because it has none of the species of motion, the very argument which is used in *De Anima* 406 A 12-16 (see pages 403-404 *supra*). Both the passage in the *Rhetoric* and that in the *Topics*, then, imply that Aristotle had "already" abandoned the doctrine of a self-moving soul. (Incidentally, *Topics* 121 A 30-39, which employs the same topic, shows that he did not believe that pleasure was a motion of any kind either.) Bignone appears to be unaware of this passage in the *Topics* and the reference to it in the *Rhetoric*; but one passage in the *Topics*, namely 140 B 2-6, he does mention (*op. cit.*, I, p. 249, n. 4), saying that here Plato's definition of soul is not openly criticized but only that of Xenocrates and that the passage consequently represents an intermediate stage of Aristotle's thought in which he was already discontented with the Platonic and Academic definition of soul but had not yet succeeded in substituting one of his own. Bignone does not appreciate the purposely double-edged nature of Aristotle's argument here (see page 12 *supra*); but more important still is the fact that he, like all the scholars mentioned above, fails to observe that the *Topics*, which is generally admitted to be one of the very earliest of Aristotle's works, contains

numerous indications that the doctrine of the self-moving soul had been abandoned. Besides 111 B 4-8 mentioned above, 123 A 15-19 argues that motion cannot be either the genus or the differentia of soul, and 127 B 13-17 that soul cannot be either essentially motion or essentially mobile, while 120 B 21-35 asserts that self-motion cannot be the genus of soul because it is not essentially but only accidentally moved, that motion is not given in the statement of essence because it is an accident indicating the action or affection of a subject, and finally that no subject has self-motion otherwise than as an accident (see on these passages pages 10-12 *supra*) There is consequently no reason to believe that Aristotle maintained the theory of self-motion at the time when he composed any of the extant works. It must, of course, be borne in mind that he could at all times (cf. *Physics* 259 A 27-B 3, 261 A 23-26, *De Motu Animal.* 700 A 16-17) speak of a "self-mover" in his own sense of the term (*Physics* 258 A 1-27 [note 310 *supra*]).

The statement of Ross, which Guthrie repeats (see page 585 *supra*), that *De Motu Animal.* 698 B 8-27, 699 A 12-B 11, and 699 B 32-700 A 6 contains the earliest reference to a transcendent mover, and that merely an argument from analogy with the movement of animals, requires a good deal of qualification. At 700 B 4-11 of that work Aristotle refers for the question of motion of the soul to the *De Anima,* in which treatise the refutation of self-motion is assumed (cf. 406 A 3-4 [page 391 *supra*], 409 A 1-3 [page 396 *supra*]), and to the *Metaphysics* for the way in which the prime mover moves that which is primarily and everlastingly in motion; and, even if these references were explained away as a "later addition" along with that in 698 A 7-11 to the argument in the *Physics* for an unmoved mover, there would still remain in 700 B 29-701 A 1 the careful comparison and distinction of the eternal mover of the heavens and the unmoved mover of the individual living being. Equally important, however, is the fact that within one of the passages which Ross cites as the "tentative" argument for a transcendent mover Aristotle refutes a theory which made the poles, as substantial points without magnitude, the movers of the universe and did so on the ground, with which Aristotle expresses his agreement, that the universe requires an unmoved

mover but no *part* of the rotating universe can be unmoved (699 A 16-24). It was suggested above (Appendix VIII, pages 558-559) that this theory is to be ascribed to Speusippus; Jaeger recognizes the importance of the passage but thinks the theory that of "ein Astronom eudoxischer Richtung wie Kallippos" who propounded it in order to meet the Aristotelian requirements of a πρῶτον κινοῦν while purposely avoiding all metaphysical hypothesis (*Aristoteles*, p. 382). In any case, whether the theory preceded that of Aristotle or was put forward as a rival to it, the passage in *De Motu Animal.* clearly cannot be the first tentative adumbration of the doctrine of an unmoved mover

Jaeger (*op. cit*, pp. 140-45) considers it to be uncertain whether Aristotle himself or some other Academic first conceived the theory of the unmoved mover; at any rate, he believes that this conception was the original germ of Aristotle's metaphysics, that this is what is meant by the reference to the god in the περὶ φιλοσοφίας who rules and maintains the motion of the world "replicatione quadam" (*frag.* 26 = Cicero, *De Natura Deorum*, I, 13, 33), and that this theory of a transcendent, unmoved mover is the third possibility mentioned by Plato in *Laws* 898 E-899 A. Guthrie (*Aristotle On the Heavens*, p xix, n *a*) has observed that this interpretation of the *Laws*, which Ross repeats (*op. cit.*, pp. 94-5), cannot be correct, since even the third possibility in the *Laws* identifies the mover with self-motion; and practically all critics have objected that the influence of the unmoved mover on the celestial sphere could not be described by the words "replicatione quadam" in *frag.* 26 which Jaeger adduces as his only evidence for the presence of this conception in the περὶ φιλοσοφίας (cf von Arnim, *op. cit.*, pp. 4-7; Guthrie, *Class. Quart.*, XXVII [1933], pp. 164-5; Ross, *op. cit.*, pp. 95-6). This "replicatio" has been variously interpreted as the mythical ἀνείλιξις of Plato's *Politicus* (270 D, 286 B; cf. Theiler, *op. cit.*, p 84, n. 1 and Bignone, *op. cit.*, II, pp. 378-80), as the diurnal motion in which the sphere of the fixed stars, identified with the "supreme god," carries along the planets and so controls the motion of the world by an "inverse revolution" (Moreau, *op. cit.*, p. 118), and as the "retrograde motion" of the planets or of the

liptic in relation to the motion of the fixed stars (von Arnim, *. cit.*, pp. 4-5). If the first of these interpretations were rrect, the clause in question would represent a myth, the ;nificance of which could not even be guessed without knowl-ge of the context. Bignone, in fact, supposes that it was a /th put into the mouth of Plato who was an interlocutor in e dialogue (*op. cit.*, II, pp. 380 and 529-30). This is unlikely, wever, for it is unintelligible that god should be said to aintain the motion of the universe by an ἀνείλιξις which ought be the counter-rotation resulting from his temporary aban-nment of the universe nor would the added specification, eique *eas partes* tribuit," have any reason in such a context. f the three interpretations, then, only the last is plausible, for is impossible that Aristotle should have called the motion of e planets from east to west in the diurnal rotation a *retro-ade* motion as the second interpretation (that of Moreau) pposes.

All interpretations of "fragments" of the περὶ φιλοσοφίας must conjectural, for that work was a dialogue in which different eakers presented different points of view and what is reported having been said there "by Aristotle" need not have repre-nted his own opinion. The reports of Cicero present the rther difficulty of being Latin résumés or paraphrases at best; id *frag.* 26 is, in addition, open to suspicion because it is put to the mouth of an Epicurean whose purpose is to show that Aristoteles in tertio de philosophia libro multa turbat." evertheless, it is possible to test the *plausibility* even of *frag.* 5. The Epicurean here asserts that Aristotle 1) modo menti ibuit omnem divinitatem, 2) modo mundum ipsum deum dicit se, 3) modo alium quendam praeficit mundo eique eas partes ibuit ut replicatione quadam mundi motum regat atque eatur, 4) tum caeli ardorem deum dicit esse. . . . There is)thing improbable about all this, particularly if we assume iat the Epicurean takes as θεός whatever Aristotle called θεῖον. s god is νοῦς and νοῦς "alone" is divine in the later works (cf. letaphysics 1072 B 14-30; *De Gen. Animal.* 736 B 27-28, 737 10), so in the περὶ εὐχῆς, we are told, Aristotle said that ὁ θεὸς νοῦς ἐστὶν ἢ ἐπέκεινά τι τοῦ νοῦ (*frag.* 49), i. e. something beyond ie human νοῦς which he also called divine (*frag.* 61). The

universe, which he could surely call at least θεῖον since he held it to be ἔμψυχον even later (cf. *De Caelo* 285 A 27-31), he is reported on independent testimony to have called ὁρατὸν θεόν (*frags.* 18 and 19), although this phrase may have been purposely copied from Plato (cf. *Timaeus* 92 C) to give rhetorical emphasis to the argument against him in which it appears to have been used (. . . οἱ τῶν χειροκμήτων οὐδὲν ᾠήθησαν διαφέρειν τοσοῦτον ὁρατὸν θεόν . . . [*frag.* 18]). The "ardor caeli," if by this the fifth essence is meant (cf. Cicero, *Acad. Post.* I, 7, 26), is later given the epithet "divine" also (*De Caelo* 269 A 30-32, 286 A 10-12). This leaves unparalleled only the third statement, that concerning the god of the "replicatio"; but in support of the interpretation adopted above one can with von Arnim point to *De Generatione* 336 A 15-B 24 for the importance in Aristotle's cosmology of the secondary motion along the ecliptic in addition to the primary motion of the first heaven (see note 299 *supra*), and, if the "replicatio" was this "other motion," it would be quite in accord with Aristotle's principles to establish over it "another god" (cf. *Metaphysics* 1073 A 26-34 [. . . ἀνάγκη . . . τὴν μίαν ὑφ' ἑνός . . .]). There is no reason, then, to deny that in the περὶ φιλοσοφίας Aristotle called both the world as a whole and the fifth essence "divine," asserted that νοῦς is the supreme divinity, and set up another god to govern the retrograde motion of the planets along the ecliptic. The subsequent criticism of the Epicurean provides the additional information that god was declared to be incorporeal (cum autem sine corpore idem vult esse deum), a characteristic which Aristotle could have given only the νοῦς and the god of the "replicatio" although the Epicurean tries to involve him in absurdity by extending it to the universe also on the ground that the universe too is called "god," and justifies the further deduction that god was said to be "quietus et beatus" (quo porro modo mundus moveri carens corpore aut quo modo semper se movens esse quietus et beatus potest? cf. Plasberg *ad loc.* who rightly prints and explains the reading of the MSS [*pace* Bignone, *op. cit.*, I, p. 252, n. 2]).

If in the περὶ φιλοσοφίας the retrograde motion along the ecliptic was ascribed to "another god," the diurnal motion of the first heaven must have been presided over by the supreme

livinity. The relation of these two gods to each other remains obscure, although *frag.* 17, if it is correctly assigned to this dialogue, indicates that Aristotle tried to establish a single ἀρχή or the universe (cf. *De Generatione* 337 A 20-22 which in a imilar fashion asserts with regard to the plurality of unmoved novers· . . . πλείους μέν, πάσας δέ πως εἶναι ταύτας ἀνάγκη ὑπὸ μίαν ρχήν); but, what is more important, nothing definite is said of he *way in which* the supreme divinity or even the god of the ' replicatio " affects the universe. The characteristic, " quietus," aken together with the fact that Cicero elsewhere (*Tusc. Disput.* I, 28, 70) cites Aristotle as making god the " moderator " of the ungenerated universe, might be taken as evidence of the " unmoved mover " in the dialogue. Slight as this vidence is, the " semper se movens " in the last sentence of *frag.* 26 does not disprove it, for that phrase modifies " mundus," not " deus " as von Arnim supposes (*op. cit.*, pp. 6-7). The Epicurean argues that the universe, being " god," must be ncorporeal and so cannot be moved *or*, if it is always moving tself, it cannot be " quietus et beatus " and so cannot be ' god "; from this it cannot be inferred that Aristotle made ' se movens " an attribute either of god or of the universe Bignone at one time takes " semper se movens " to refer to ' mens " [*op. cit.*, I, p 252], elsewhere to refer to the stars as nimated ether [*op. cit.*, II, pp. 376-7 and p. 382, n. 3], and gain, taking it to refer to the stars or the ether, he says that ' quo porro modo [mundus] moveri carens corpore " refers to ' mens " and indicates that Aristotle meant this supreme livinity to be immobile [*op. cit.*, II, p 399]!) A passage of Philodemus (περὶ τῆς θεῶν διαγωγῆς, III, col 10, lines 6-12 [Diels, *Abhand. des K. Preuss. Akad. der Wiss.*, Phil.-Hist. Kl., 1916, No. 4, p 30]) which argues against " immobile gods " has been adduced by Bignone (*op. cit.*, II, pp 398-9) as independent evidence for the immobility of the divinity, " mens," in the περὶ φιλοσοφίας, but it is not certain that the passage refers to his dialogue or to any of the exoteric works of Aristotle (cf. Merlan, *Phil. Woch.*, LVIII [1938], p. 67, n 5). It is Aristotle himself who provides the best evidence for the relation of god o the universe in the περὶ φιλοσοφίας In *Metaphysics* 1072 B 1-3 the doctrine of the unmoved mover is defended by refer-

ence to " the well known distinction " (cf. Ross, *Metaphysics*, II, p 377 on 1072 B 2) between οὗ ἕνεκα τινός and τινί which shows that an immobile entity may be the final cause Reference to this distinction is briefly made at *De Anima* 415 B 2-3 and 415 B 20-21 and also at *Eth. End.* 1249 B 13-16 (*De Gen. Animal.* 742 A 22, cited by Walzer after Christ, is not a parallel [cf Ross, *Metaphysics*, II, pp 376-7]); and in each case the purpose of the distinction is to defend the notion of an immobile final cause, in the first case the eternal and divine toward which all things yearn (415 B 1-3; cf Rodier, *Traité de l'Ame*, II, p. 229), in the second case the soul (415 B 15-21; cf. Rodier, *op. cit.*, II, p. 233), and in the third case god. Now, in the second book of the *Physics*, in which the operation of the unmoved mover as final cause is clearly stated (198 A 35-B 4 [see page 585 *supra*]), Aristotle refers to the double sense of οὗ ἕνεκα and here, instead of explaining what the two senses are, says that this has been stated in the περὶ φιλοσοφίας (194 A 35-36) There can be no doubt, then, that the conception of the objective final cause as immobile mover did appear in the dialogue, the context of the references to this meaning of οὗ ἕνεκα indicates that the final cause in this sense must have been declared identical with the highest entity just as it is in *De Caelo* 292 A 18-B 25 (n b 292 B 4-7), where the heavenly motions are explained as actions to attain the end on the part of bodies which fall short of it in varying degrees (see pages 586-587 *supra*) The supreme divinity, consequently, who was " sine corpore, quietus et beatus " and who was identified with νοῦς, must have been said to influence the universe as its objective final cause; the " other god " could hardly have produced the retrograde motion along the ecliptic in any other way, though the relation of these two " unmoved movers " to each other must have been left as obscure as that of the supreme god and the unmoved movers of the spheres remains in Aristotle's later writings.

Guthrie in his second treatment of the problem (*Aristotle On the Heavens*, p xxvi) agrees with Ross (*Aristotle's Physics*, p 96) that *frags.* 23 and 24, assigned to the περὶ φιλοσοφίας, exclude the possibility *not* of a transcendent unmoved mover, as von Arnim had asserted (*op. cit.*, pp. 7-9), but only of a force

which could move the stars "contrary to nature." Both Guthrie and Ross, however, stress the point that, whereas in the *De Caelo* the circular motion of the stars is a motion "natural" to the fifth essence, in *frag.* 24 their motion is said to be "voluntary" and it is implied that upward and downward motion alone is "natural." It would not be surprising if, as *frag.* 23 implies, Aristotle in the dialogue attributed life and intelligence to the heavenly bodies, for they are treated in later works as living, divine bodies, and more divine than man (cf. *De Caelo* 292 A 18-21, 292 B 1-2; *Metaphysics* 1074 A 30-31; *Eth. Nic.* 1141 A 34-B 2); this would mean that a star is a complex of soul or mind and body, the body being the fifth essence. Here, however, *frag.* 23 presents a difficulty, for it clearly operates with a system of four simple bodies, not five, and makes the material of the stars the fourth, which should be fire though it is called "aether"; and the logic of *frag.* 24 has the same implication Ross (*op. cit.*, pp. 96-7), recognizing this, seems to think that Aristotle at this time had not yet distinguished the fifth essence from the four terrestrial elements; but that is more than improbable, for Cicero elsewhere expressly ascribes to him the doctrine that the stars consist of a fifth essence "singulare eorumque quattuor dissimile" (*Acad. Post.* I, 7, 26). The fact is that *frags.* 23 and 24 (= *De Nat. Deor.* II, 15, 42 and 16, 44) occur in the speech of Balbus the Stoic who here seeks to find in Aristotle support for his own doctrines. The Stoic system, however, recognized four simple bodies, not five, and throughout the speech of Balbus "aether," "ardor mundi," "ardor caelestis" refer to the pure astral fire of the Stoics (*De Nat. Deor.* II, 11, 31-12, 32; II, 15, 41; II, 24, 64; II, 36, 91-92; II, 45, 117; cf I, 14, 36-37); Cicero, in fact, never uses "aether" for the Aristotelian fifth essence which he says is "vacans nomine" (*Tusc. Disput.* I, 10, 22 and 17, 41). It is certain, then, that for one thing the section between *frags.* 23 and 24, i. e. *De Nat. Deor.* II, 16, 42-43, cannot be from Aristotle as Jaeger maintains (*op. cit.*, pp. 151-3), for the doctrine here espoused that the stars which inhabit "aetheriam partem mundi" are nourished "marinis terrenisque umoribus" depends upon the Stoic theory of the fiery "aether" (cf. II, 46, 118) but is incompatible with the doctrine ascribed to Aristotle by

Cicero in *Acad. Post.* I, 7, 26; and Jaeger's later attempt to support his thesis by means of *De Generatione* 335 A 14-18 (cf. *A. J. P.*, LVIII [1937], p. 355) only confirms his self-contradiction, for that passage speaks of *fire* as alone being nourished whereas Jaeger himself assumes that in the περὶ φιλοσοφίας the matter of the stars was not fire but the fifth essence. It should also be obvious that *frags.* 23 and 24 do not and could not faithfully preserve Aristotelian arguments but are, at best, adaptations of such arguments to Stoic theory, made by Cicero or rather by his Stoic source. Any such adaptation would have to suppress the fifth essence or substitute for it the Stoic astral fire, and with that suppression or substitution would have to disappear all reference to a " natural " circular motion. Furthermore, the Stoic Balbus maintains that the astral fire is self-moving (*De Nat. Deor.* II, 11, 31), so that adaptation of an Aristotelian argument to his use must result in substituting for the fifth essence an element, " aether," which not only does not have " natural " circular motion but which does move itself Consequently no safe inference concerning the motion of the fifth essence in the περὶ φιλοσοφίας can be drawn from the argument of *frag.* 24. Nevertheless, the distinction of natural, enforced, and voluntary motion there recorded may be genuinely Aristotelian The difficulty of reconciling circular motion with the conception of natural motion has already been observed, as has one case at least in which Aristotle is forced to distinguish circular motion from both natural motion and motion contrary to nature (*De Caelo* 288 A 20-23, see pages 581-582 *supra*); and *frag.* 24 may represent an attempt to explain how the motion of the fifth essence, though not fitting the conception of natural motion as motion from alien place to proper place, is still not contrary to nature. The distinction may have had a more general significance, however, for the dichotomy, " natural " and " constrained," is not the only classification of motion employed by Aristotle. Some motions of living beings are ἑκούσιοι (the proper term for " voluntary " being ἑκούσιον, which is wider than προαίρεσις, cf. *Eth. Nic.* 1111 B 6-10), and this gives a classification of motions as ἑκούσιοι, οὐχ ἑκούσιοι, and ἀκούσιοι (*De Motu Animal.* 703 B 3-5). The ἀκούσιον of this classification is a species of the βίαιον of the other, while the

οὐχ ἑκούσιον corresponds to the κατὰ φύσιν (cf. especially *Eth. Eud.* 1224 A 10-20), so that Aristotle's complete classification of motions is, as *frag.* 24 says, "natural, constrained, and voluntary." Moreover, in *De Motu Animal.* 700 B 29-32 the motion of the heaven, which is everlastingly moved by the transcendent unmoved mover, is said to be similar—save for its continuity—to the motion of any living being; in other words, even here the motion of the heaven is to be classified as "voluntary." The triple classification in *frag.* 24 is, therefore, no reason for supposing that in the περὶ φιλοσοφίας Aristotle meant the fifth essence to be a self-mover. (Jaeger's contention [*op. cit.*, p. 155, n. 1] that in *Eth. Nic.* 1112 A 21 Aristotle expressly rejects his earlier doctrine is a strange misinterpretation of that passage where it is said only that no man takes counsel concerning eternal things; furthermore, Jaeger's restriction of "voluntary motion" to that which arises from βουλευτικὴ ὄρεξις is forbidden by *Eth. Nic.* 1111 B 6-10, cited above.)

Yet Cicero elsewhere asserts that Aristotle derived from the fifth essence not only the stars but also mind and that he called the soul itself by the "new name" ἐνδελέχεια as if it were a kind of everlasting motion (*Tusc. Disput.* I, 10, 22; cf. I, 17, 41 and 26, 65; *Acad. Post.* I, 7, 26 and 11, 39; and *De Fin.* IV, 5, 12). This testimony has been accepted by Moreau (*op. cit.*, pp. 121-3) at its face value; and Bignone has written at length in defense of its authenticity and accuracy (*op. cit.*, I, pp. 227-272). The latter's attempts to adduce supporting evidence independent of Cicero will not, to be sure, pass critical scrutiny. Themistius, *De Anima*, pp. 106, 29-107, 7 (= Aristotle, *frag.* 38) does not, as Bignone intimates (*op. cit.*, I, p. 253, n. 3), say that Aristotle used the argument from self-motion to establish the soul's immortality but only that the more plausible of the arguments which he did work out in the *Eudemus* could be made to apply to the νοῦς rather than the soul in general as could those of Plato. Nor is there, as Bignone thinks (*op. cit.*, I, pp. 256-7), any reference to the self-moving soul in the passage of Psellus published by Bidez (*Cat. des manuscrits alchimiques grecs*, VI, p. 171; cf. Croissant, *Aristote et les Mystères*, pp. 145-6 [partially printed as *frag.* 15 of *De Philosophia* in Walzer, *Aristotelis Dialogorum Fragmenta*]). In

that passage the clause, *ὅστις μὲν οὖν διὰ τοῦ αὐτοκινήτου τὴν τῆς ψυχῆς ἀθανασίαν ἐδέξατο οὗτος διδασκαλικὴν ἔσχε τὴν μάθησιν*, is explained by a remark of Olympiodorus, *In Gorgiam* VI, 1 (p 41, 1-24, Norvin), part of which Bignone later added as "una nuova preziosa testimonianza" (*Studi sul Pensiero Antico*, pp. 320-22); but anyone who will read the whole sentence of Olympiodorus instead of the unintelligible mutilation of it printed by Bignone will see that the self-moving soul is not mentioned there at all, much less ascribed to Aristotle Olympiodorus is simply explaining that *ἡ διδασκαλικὴ πειθώ* is *αὐτοκίνητος* whereas *ἡ πιστευτικὴ* is *ἑτεροκίνητος*, which means that the former does not rely upon authority as the latter does. No more justified is Bignone's inference (*op. cit.*, I, pp. 259-60) from Lucian, *Iudicium Vocalium* X, 95, which mentions neither Aristotle nor the soul and means only that Lucian knew a common word *ἐνδελέχεια*, of which *ἐντελέχεια* seemed to him to be a perversion. Philo in *De Somniis* I, 30-31 does mention *ἐνδελέχεια* in a list of possible answers to what the essential nature of *νοῦς* may be, but no names are attached to the various possibilities, among which *εἶδος* ought to refer to Aristotle; and it is remarkable that *ἐνδελέχεια*, if this is the correct reading, should occur as it does among the answers that give *νοῦς* an *incorporeal*, not a corporeal, nature To be sure, Bignone seems to want it both ways when he tries to identify the soul as fifth essence with the incorporeality of the Xenocratean soul (*op. cit.*, I, p. 245); but Cicero makes Aristotle the first to introduce the fifth essence (*Tusc. Disput.* I, 26, 65, contrast Xenocrates, *frag.* 53) and explicitly distinguishes the two theories (*Tusc. Disput.* I, 17, 41; cf. I, 10, 20 over against I, 10, 22) stressing the incorporeality in that of Xenocrates (cf. also *Acad. Prior.* II, 39, 124) so that in *Acad. Post.* I, 11, 39 too the "expers corporis" of Xenocrates' theory in the third sentence is clearly *not* meant to refer to the "quinta natura" in the first. Furthermore, Bignone's demonstration (*op. cit.*, I, pp. 228-46) that *Tusc. Disput.* I, 27, 66-29, 71 (. . . ne interire quidem igitur) is in its entirety a reproduction of Aristotle's *περὶ φιλοσοφίας* must be accounted a failure. To be sure, the notion that "singularis est igitur quaedam natura atque vis animi sejuncta ab his usitatis notisque naturis" (27, 66), combined with the reference at the end of 26, 65 to the

ifth essence, " first introduced by Aristotle," seems to indicate hat Cicero here identifies the soul with the fifth essence; but, hen, the next sentence but one in 27, 66 makes god also " mens . . omnia sentiens et movens ipsaque praedita motu sempiterno " = the fifth essence, which is in conflict with the statement in *De Nat. Deor.* I, 13, 33 (Aristotle, *frag.* 26) that in he περὶ φιλοσοφίας god was declared to be incorporeal, a statement which Bignone himself defends as accurate, maintaining hat in that dialogue Aristotle made the highest god pure mind, ncorporeal and immobile (*op. cit.*, II, p. 399; cf. II, p. 360, n. 3). Moreover, in 28, 68, in a clause omitted by Bignone, the se of ἀντίχθων in the sense of " south temperate zone " shows hat this section cannot have come directly from Aristotle to vhom the word meant only the Pythagorean " counter-earth "; he alternative statement of Plato's and Aristotle's views in 28, 70 and the use in 29, 71 of an argument from the *Phaedo* along vith the reference to that dialogue and the *Crito* show that Cicero—or his " source "—here freely combined Platonic and Aristotelian elements

Nevertheless, if Cicero's *specific* statements, especially that n *Tusc. Disput.* I, 10, 22, be accepted as accurate, Aristotle nust be supposed in his early, published works to have made he soul a material substance which is in perpetual motion It s tempting to assume that this means a material self-mover (cf. Moreau, *op. cit.*, pp. 122-3; Bignone, *op. cit.*, I, p. 262) and hat Aristotle's own early doctrine of self-motion reflected the ame misunderstanding of Plato's conception as does his later riticism (see pages 402-413 *supra*), but there are strong easons for refraining from this easy conclusion. For one thing, ince the conception of an unmoved mover was present in the περὶ φιλοσοφίας (see pages 593-595 *supra*), it is practically mpossible that Aristotle should there have admitted a self-nover also. For another, even Cicero does not say that Aristotle nade the soul a self-mover but only that he gave it a name vhich Cicero interprets as implying everlasting motion (*Tusc. Disput.* I, 10, 22; for " semper se movens " in *frag.* 26 see page 594 *supra*). Moreover, if Aristotle did identify the soul with he fifth essence and declare it to be self-moved, it is very strange that the Stoic Balbus, who adapts Aristotelian argu-

ments by substituting the Stoic "aether" for the fifth essence (see pages 596-597 *supra* on *frags.* 23 and 24), mentions no such doctrine of Aristotle when he wants to prove that the Stoic astral fire is soul because it is self-moved but instead appeals to Plato and uses the argument of the *Phaedrus* (*De Nat. Deor.* II, 11, 31-12, 32) and that Cicero, when he wants to prove the immortality of the soul from its self-motion, falls back upon this same passage of the *Phaedrus* which he translates in *De Re Publica* VI, 25, 27 and *Tusc. Disput.* I, 23, 53-54. Furthermore, it is questionable that Aristotle could really have meant to *identify* soul with the fifth essence In the *Eudemus* he had called the soul an εἶδος (*frag.* 46; cf. *frag.* 45 [p 50, 9, Rose = Philoponus, *De Anima*, p. 144, 27]), and it is unlikely that in the περὶ φιλοσοφίας he abandoned the position that it is incorporeal, especially since he certainly maintained this opinion with regard to the νοῦς which he called god Even the doctrine that the heavenly bodies are a peculiar fifth element endowed with soul (cf Bignone, *op. cit.*, I, p. 197 ["dotati di anima e formati di una particolare sostanza"], cf. II, pp. 351-2, 364, and 424) implies that the soul itself is distinguishable from the stellar material which it animates. The logic of *frag.* 23 indicates that the original Aristotelian argument which it represents must have proceeded by analogy from the fact that in the regions of the sublunar elements there are living beings consisting of these elements animated by soul to the conclusion that the heavenly bodies must similarly be the fifth essence animated by soul (cf. Bignone, *op. cit.*, II, p. 424, Jaeger, *op. cit.*, p 146); it is unreasonable, then, to suppose that Aristotle would have identified soul with the matter of the heavenly bodies any more than he identified it with the matter of sublunar animals.

That some later "Aristotelians" did identify soul with the fifth essence there can be no doubt (Stobaeus, *Ecl.* I, 870 [I, p. 366, 25, Wachsmuth]; cf. Philo, *Quis Rer. Div. Heres*, § 283 [III, p. 64, Wendland] where the human soul is assumed to be a particle of the πέμπτη οὐσία κυκλοφορητική); but the source of this identification need not be sought in a special doctrine peculiar to the lost περὶ φιλοσοφίας. According to *De Gen. Animal.* 736 B 29-737 A 12 the soul is connected with a mate-

al " more divine than the so-called elements," a material which ἀνάλογον τῷ τῶν ἄστρων στοιχείῳ and is contained in the pneuma " which is in turn contained in the sperm. This does ɔt mean that the material which corresponds to the element f the stars *is* soul or " a spiritual substance "; it is rather the :imary *material* substrate of soul. Theophrastus consequently ɔuld define soul as τελειότης τοῦ θείου σώματος (cf. Stobaeus, *c. cit.* [I, pp. 366, 26-367, 2, Wachsmuth]); and as a result ther of such a definition or of a concise remark in the περὶ λοσοφίας to the effect that the soul is always connected with ıe θεῖον σῶμα the identification of soul and fifth essence would most certainly be ascribed to Aristotle by later materialistic eripatetics or by Stoic interpreters. In the complex consisting f the soul and its " vehicle," the soul itself is an unmoved ıover (*De Gen. Animal.* 740 B 25-741 A 2; cf. 789 B 5-15 and *'e Motu Animal.* 703 A 9-29); but the complex could be treated ; a " self-mover " even by Aristotle (see page 590 *supra*), ıd those who, neglecting the distinction between the soul and s " vehicle," identified the two would be bound to think of the ɔul itself as a material self-mover of the kind that Aristotle id not allow.

The notion that the principle, ἅπαν τὸ κινούμενον ὑπό τινος κινεῖται, hich brought with it the abandonment of self-motion could ıve been formulated by Aristotle only after a long " develop- ıent " (von Arnim, *op. cit.*, p. 12; Guthrie, *Class. Quart.*, XVII [1933], p. 169) strangely overlooks the fact that the rinciple is stated by Plato in *Timaeus* 57 E 3-6 (cf. Simplicius, *hys.*, pp. 1351, 33-1352, 4); for Plato, of course, the principle ɔplies only to " mechanical " motion (cf. Cornford, *Plato's osmology*, p. 239), but Aristotle's own discovery and use of must be at least as early as his reading of this passage.

APPENDIX XI

Note 359 on Page 426

Plato considered soul to be the artificer of everything, whether "natural" or "artificial" (see page 251 *supra* and *Laws* 896 E-897 B); and this the author of the *Epinomis* expressed in the dogmatic formula that to soul alone it belongs πλάττειν καὶ δημιουργεῖν, to body πλάττεσθαι καὶ γίγνεσθαι καὶ ὁρᾶσθαι (981 B-C, cf. 984 B-D). Consequently, some interpreters do not content themselves with pointing out that if the demiurge is not mythical he must be a soul but go on to assert that he is meant to be identical with the world-soul which he is mythically represented as creating (Theiler, *Zur Geschichte der teleologischen Naturbetrachtung*, pp. 69-73; Grube, *Plato's Thought*, p 170) or with "the Reason in the World-Soul" (Cornford, *Plato's Cosmology*, p. 197)

To Hardie, on the other hand, "that God in the sense of the metaphysical first cause is a soul is as much myth as is the origin of our world in time" (*A Study in Plato*, p. 154), and he maintains that the idea of good may be fairly thought of as the God recognized in the Platonic philosophy (*op. cit.*, pp. 155-6). Many scholars have identified the demiurge with the idea of good in one way or another, among them Zeller (*Phil. Griech.*, II, 1, pp. 710-18; cf. p 718, n. 1 for his precursors) and more recently Frutiger (*Les Mythes de Platon*, pp 206-7), Mugnier (*Le Sens de Mot* ΘΕΙΟΣ *chez Platon*, pp 118-42), and E Hoffmann (Anhang zu Zeller, *Phil. Griech.*, II, 1, pp 1098-1105; *Platonismus und Mystik*, pp 11-12, 19-20 [but cf here, p. 15, n. 2 where the idea of good seems rather to be a symbol of the demiurge]) A variation of this interpretation is that which makes the demiurge and the ideas, regarded as a unified system, the subjective and objective aspects respectively of the single supreme divinity (Diès, *Autour de Platon*, pp 550-51, 553-55). Robin, however, identifies the idea of good with the true Platonic god but denies that this god is the demiurge (*Platon*, pp. 248-52); while Festugière outbids Robin by saying at one

and the same time that this true god, which he calls "le Bien-Un-Cause," is identical with "the good of the *Republic*" and transcends the idea of good (*Contemplation et Vie Contemplative selon Platon*, pp. 204-5, 265-6). Festugière's theory may be dismissed as a mere conjecture, since he admits that Plato says no such thing "en propres termes" and "ne conclut pas"; it is sufficiently refuted, anyway, by the facts that "the good of the *Republic*" *is* the idea of good (505 A, 508 E, 517 B-C, 526 D-E), that the μικτόν of the *Philebus* (23 C-27 B) does *not* represent the ideas but is the class of γιγνόμενα as 27 A 11-12 proves (cf. also Glube, *Plato's Thought*, pp 301-4), and that there is not the slightest indication of any "Principe du *Philèbe*" (!) transcending the ideas. Robin's reason for refusing to admit that the demiurge can be god is the same as Festugière's. the demiurge is "below" the ideas, is dependent upon them, and is functionally related to the sensible world. Unlike Festugière, however, Robin does not insist that god must transcend *every* idea; he is content to identify him with "the good of the *Republic*" (which he does not deny is an idea), for this, he says, is to the intelligible world what the demiurge is to the sensible world except that the former is an ultimate and universal principle while the latter is subordinate and has meaning only relative to degraded reality. His support for this in the text of Plato is *Republic* 509 B where it is said that the good is not οὐσία but ἐπέκεινα τῆς οὐσίας πρεσβείᾳ καὶ δυνάμει ὑπερέχον. Curiously enough, it is just this passage (i. e. 508 E-509 B) and *Republic* 517 B-C on which they too rely who identify the idea of good and the demiurge.

Now, Plato nowhere calls any idea θεός, nor does he intimate that god, in any sense, is an idea. In *Timaeus* 37 C 6-7 τῶν ἀϊδίων θεῶν ἄγαλμα, which has often been cited as an exception, refers to the universe not as "an image of the ideas" but as "a shrine of the everlasting gods" (cf. Cornford, *Plato's Cosmology*, pp. 99-102, and Wilamowitz, *Platon*, II, p. 388 with the reference to his commentary on βωμὸν . . . δορὸς ἄγαλμα in Euripides, *Heracles* 48-9); neither *Timaeus* 29 E 3 nor 92 C 7 says, as has sometimes been maintained, that the universe is an image of the demiurge (cf. Hackforth, *Class. Quart.*, XXX [1936], p. 7, n. 1; Cornford, *op. cit.*, p. 37 and p. 359, n. 1);

and as for 36 E 5-37 A 2 which to Diès seems conclusive proof of the identity of demiurge and model (*op. cit.*, p. 554, n. 1), the reference here to the demiurge as "the best of the intelligibles" means nothing more than does "intelligible" as used of soul in *Laws* 898 D-E, 1 e. ἀναίσθητον πάσαις ταῖς τοῦ σώματος αἰσθήσεσι, νοητὸν δέ (cf Shorey, *A. J. P.*, X [1889], p. 55), so that Diès might as well have argued that this passage of the *Timaeus* is evidence for identifying the demiurge with the so-called "best soul" of that passage of the *Laws*. Moreover, all critics seem to be agreed on one characteristic of the Platonic conception of deity: god has or is νοῦς. In the *Timaeus* the demiurge is the mind that rules "necessity" by persuasion (47 E-48 A) and gods have νοῦς which men have only to a slight extent (51 E). In the *Philebus* νοῦς is the king of heaven and earth (28 C-E); and "cause," which is called τὸ ποιοῦν and τὸ δημιουργοῦν (26 E-27 B), is given the name σοφία καὶ νοῦς and is said to organize the years and seasons and months (30 C). Since this last work is in the *Timaeus* described as the contrivance of the demiurge (37 E), he has been thought identical with the cause called νοῦς in the *Philebus*, particularly since it is διὰ τὴν τῆς αἰτίας δύναμιν that in the nature of Zeus there comes to be a royal soul and royal νοῦς (*Philebus* 30 D), this royal soul being the world-soul of the *Timaeus* (cf. Shorey, *What Plato Said*, p. 608) Finally in the *Laws* it is said that genuine νοῦς is, by right, the ruler of everything (875 C 7-D 2), that νοῦς has marshalled the universe (966 E 2-4), and that the motion of the best kind of soul, the cause of the heaven's revolution, is the motion of νοῦς and of this the physical manifestation or "likeness" is continual axial rotation (897 D-898 C). In fact, many who identify god with the idea of good even cite *Philebus* 22 C where to Philebus' gibe Socrates retorts that, while *his* νοῦς may not be the good, he thinks it is somehow different with the genuine and divine νοῦς (so Mugnier, *op. cit.*, p. 132, and Festugière, *op. cit.*, p. 205, n 5; cf. the list in Shorey, *What Plato Said*, p. 606); that this is by-play and not doctrine, however, is proved, if proof be necessary, by the unqualified statement at the end (67 A) that νοῦς is not τἀγαθὸν αὐτό.

Since, then, for Plato νοῦς is either god or an essential char-

:eristic of whatever deity may be, the very passages of the *public* cited to support the identification of god with the :a of good show that this identification is impossible, whether "god" be meant the demiurge of the *Timaeus* or some gher deity. What these passages mean as regards the relation the idea of good to the other ideas must be considered later the proper context; it is irrelevant here, for, whatever this lation may be, the idea of good is declared to be not νοῦς but e cause of νοῦς and so it cannot be god but is in some sense the use of god's being god. In 517 B-C, where those who identify e idea of good with the demiurge stress the statement that e former "gives birth in the visible world to light and the rd of light," it is said that this idea in the intelligible world oduces ἀλήθεια καὶ νοῦς. The earlier passage makes this still ore clear (508 A-509 B). The sun is the analogue in the nsible world of the idea of good in the intelligible world; id as the former is not vision or the organ or subject of vision even light, by production of which it is the cause of seeing id being seen, so the latter is not νοῦς as subject or organ or tivity nor is it even truth, which is its effluence as light is at of the sun.

Deity, then, as νοῦς is not causally independent and so cannot : "the ultimate reality." It must, in fact, since it is νοῦς, exist soul (see page 425 *supra*) and consequently must be inter-ediate between the ideas and phenomena (see pages 407-411 *pra*). To be sure, even this necessary relation of νοῦς to soul is been denied. Hackforth, identifying god with νοῦς but fraining from considering the relation of god to the ideas, stinguishes νοῦς as an ultimate principle from soul as a deriva-ve existent and says that when Plato denies the possibility of ῦς apart from soul he is "speaking of the Universe, not of its Creator' or cause, of that which *has* νοῦς, not of that which *is* ῦς" (*Class. Quart*, XXX [1936], pp. 4-9). Of the three ıssages which Hackforth cites, *Philebus* 30 C and *Timaeus*) B might appear to admit this interpretation (Zeller had used ıem in the same way for the same purpose [*Phil. Griech.*, II, pp. 714-15]); but in the third, *Sophist* 249 A, Plato is not ying that the universe has νοῦς and so must have a soul. On ıe contrary, the argument of *Sophist* 248 E-249 D is quite

general (see Appendix IX, page 577 *supra*). It is an attempt to prove that the totality of the real includes motion, i. e. that κίνησις is real; and it reaches this conclusion by proceeding from the assumption that reality includes νοῦς through the steps that νοῦς implies life, life implies soul, and soul implies motion, an argument which Plato could not have formulated if he had believed that there is *any* real νοῦς which does not imply soul. At any rate, the *Republic* shows both that νοῦς is causally dependent upon the ideas and why Plato insists that it can exist only in soul. As there is vision in the eyes as soon as they are turned upon objects lighted by the sun, so is there νοῦς in the soul as soon as it rests upon the intelligibles illuminated by the truth and reality emanating from the idea of good as light does from the sun (508 B-D). Similarly in the *Timaeus*, although at the beginning it is said that the demiurge constructed νοῦς *within* soul (30 B), it is later explained that νοῦς is the result in the soul of the soul's "contact" with the ideas (37 A-C). For Plato, then, νοῦς is not an "entity" but is just the soul's ability (cf *Republic* 508 E) to "see" the ideas or the state in the soul (i e. νόησις, *Republic* 511 D, *Timaeus* 52 A) produced by sight of them. God, therefore, must be "soul having νοῦς" or "enlightened soul" (*Laws* 897 B: ψυχὴ . . . νοῦν προσλαβοῦσα, cf. *Timaeus* 46 E 4: μετὰ νοῦ); that is, he must be self-moving motion, the *mode* or *direction* of which is determined by complete and constant vision of the ideas and which, therefore, produces its effects—so far as this is possible—in conformity with the nature of the ideas and with the good which is the cause of its knowledge, i. e. its vision of the ideas (*Laws* 897 B: νοῦν προσλαβοῦσα . . . ὀρθὰ καὶ εὐδαίμονα παιδαγωγεῖ πάντα [for the corrupt text here omitted between προσλαβοῦσα and ὀρθά read ἀεὶ θεῖον, ὀρθῶς θέουσα, with Winckelmann and Hermann]). The "cause" of the *Philebus* called σοφία καὶ νοῦς which cannot come to be without soul and from the nature of which as cause it follows that there must be soul and νοῦς in Zeus and other gods (30 C-D), this cause itself is not "god" but a logical abstraction, "intelligent causation" in general; and the demiurge of the *Timaeus* is a personification of this abstraction, a symbol of the class of causes ὅσαι μετὰ νοῦ καλῶν καὶ ἀγαθῶν δημιουργοί (46 E 4).

The demiurge in the myth of the *Timaeus*, then, does not mean, as Hackforth seems to believe (*op. cit.*, p. 6), that for Plato god is "one and only one"; on the other hand, because, as Hackforth rightly says, the argument of *Laws* X does not attempt to establish the existence of a single supreme deity and the ἀρίστη ψυχή of 897 C and 898 C means "the best kind of soul," it does not follow that this "best kind of soul," whether one or many, is not what Plato meant by "god." Nowhere does Plato say that god is "one and only one." It has frequently been observed that, once in the *Timaeus* the "created gods" have been introduced, "god," "the god," and "the gods" are used practically without discrimination (cf. Grube, *Plato's Thought*, p. 169; Cornford, *Plato's Cosmology*, pp. 38, 280); souls which are "good in all virtue" are *ipso facto* gods (*Laws* 899 B), and even where the "royal" soul and νοῦς of Zeus are mentioned "other gods" appear in the same sentence (*Philebus* 30 D). Soul is, to be sure, in the *Laws* as in the *Timaeus* "a thing whose being depends upon something more ultimate"; but, having established this, Hackforth's conclusion that Plato's god cannot be a soul follows only from what he has "dogmatically" set up as one of the two criteria of "god," namely that "'God' must have independent, not derivative, existence" (*op. cit.*, p. 5). Now, this criterion, whether tacitly assumed or openly expressed, has motivated all the attempts to identify the idea of good with the demiurge or, more logically, with a deity superior to the demiurge or to find a Platonic god superior even to the idea of good; but the criterion was obviously not Plato's. His conception of νοῦς requires that god be subordinate to the ideas; and this subordination he enunciated not only in the mythical form of the nourishment of god's mind by contemplation of the ideas (*Phaedrus* 247 D) but also in the statement that god's divinity is a result of his relation to the ideas (*Phaedrus* 249 C 6). The doctrine is contained in the *Euthyphro*, where Plato's position clearly is that τὸ ὅσιον is beloved of god because it is ὅσιον and it is not ὅσιον because it is beloved of god (*Euthyphro* 10 A, 11 A; Grube, *Plato's Thought*, pp. 152-3), and it is the same principle which in *Laws* 818 A-D is expressed by the θεῖαι ἀνάγκαι which are binding upon god and without knowledge and prac-

tice of which (ἃς μὴ πράξας μηδὲ αὖ μαθών [where πράξας cannot mean "having created," *pace* Ritter]) there could not be any god for men nor any divinity or hero capable of "tending" humanity.

Of a Platonic doctrine of god Aristotle says nothing whatsoever *Frag.* 49, interpreted by Simplicius (*De Caelo*, p. 485, 19-22) as an admission of an entity superior to νοῦς and οὐσία and by modern scholars as referring in one way or another to Plato's doctrine (e g Friedländer, *Platon*, I, p. 73, n. 1; E. Frank, *A. J. P.*, LXI [1940], p. 179, n 60), is probably only a reference to Aristotle's own distinction between human and divine νοῦς (see Appendix X, p 592 *supra*), perhaps even specifically to the supreme state of god as νόησις νοήσεως (*Metaphysics* 1072 B 24-26, 1074 B 32-35; cf. Bernays, *Die Dialoge des Aristoteles*, p. 123; Jaeger, *Aristoteles*, p 251, who cites as parallel *Eth. Eud.* 1248 A 24-29); and, if there is here any incidental reference to Plato, it is in criticism of his having assumed that something other than god is ἐπέκεινα τοῦ νοῦ and so having subordinated god to some higher entity (cf. the criticism of Anaxagoras' νοῦς in *Metaphysics* 1075 B 8-10). In referring to the "noble lie" of the *Republic* (415 A) Aristotle does mention (*Politics* 1264 B 10-15) the "god" who blends the different metals in the souls of the different classes at birth; but his criticism is not here directed against the "myth" itself, and he obviously does not take this "god" seriously He nowhere ascribes to Plato, in report or criticism, the opinion that the ideas are created by god; and his silence in this matter can only signify that he understood the φυτουργός of *Republic* 597 B-E, which Robin seriously adduces as evidence of the identity of god with the idea of good (*Platon*, p. 250; cf. Adam, *Republic of Plato*, II, pp. 390-91), not to have been meant as metaphysical doctrine at all (cf Zeller, *Phil. Griech.*, II, 1, p. 666, n. 4; Frutiger, *Les Mythes de Platon*, pp. 105-6; Cherniss, *A. J. P.*, LIII [1932], pp. 233-42). Nor does he pay much more attention to the demiurge of the *Timaeus*; and this is particularly remarkable in view of the fact that the demiurge as a Platonic symbol of intelligent causation is not restricted to that dialogue (cf *Republic* 507 C, 529 D-530 B; *Sophist* 265 B-D; *Politicus* 270 A, 273 A-C) and especially in view of his literal interpreta-

ion of the "beginning" of the universe in the *Timaeus*. Once in his criticism of the *psychogonia* he mentions the "god" of the *Timaeus* (*De Anima* 407 B 9-12 [page 395 *supra*]), but neither this criticism nor any part of his résumé touches the nature of this "god" or his relation to the universe. So, for example, at the beginning of the résumé the forms κατέκαμψεν (406 B 31) and διεῖλεν (407 A 1) are used without an expressed subject. Modern editors tacitly make the subject in both cases "the demiurge," although the demiurge has not been mentioned and the only noun in the nominative case previously expressed is ὁ Τίμαιος (406 B 26). Strictly, therefore, "Timaeus" should be the subject of both verbs; but whether in Aristotle's mind as he wrote the sentences the expressed "Timaeus" or the unexpressed "demiurge" was the subject of these verbs, the passage as it stands shows how little importance he attached to the divine artisan of the *Timaeus*. The same conclusion is inescapable in regard to *Metaphysics* 991 A 22-23. This passage most probably does not refer to the demiurge at all (see note 294 *supra*); but if, as some scholars maintain, it *does*, then it does so only to dismiss him as a mythical figure without philosophical significance. That this, in any case, was Aristotle's attitude is assured by the fact that in *Metaphysics* Λ, where the *Timaeus* is directly referred to (1072 A 2-3), he criticizes those who posit ideas for having no principle which is the cause of μέθεξις (1075 B 17-20; cf 1045 B 8-9 [see note 296 *supra*]). The same conclusion is demanded by his statement at *Metaphysics* 988 A 8-11 (see page 184 *supra*) that of the four causes Plato used only two, the essential and the material, a statement which incidentally, whether right or wrong, contradicts the use to which Robin puts the passage (*Platon*, pp. 250-51) in identifying god with the idea of good by way of "the one." It consequently appears to be particularly perverse that, while Theophrastus, who admitted that the generation in the *Timaeus* was probably not meant literally (see note 356 *supra* on *Phys. Op.* 11), asserted that Plato posited two principles, the πανδεχές as matter (*Timaeus* 51 A) and a moving cause ascribed to the power of god and the good (Theophrastus, *frag.* 48 = *Phys. Op.* 9), Aristotle himself dismissed the demiurge as without significance in Plato's serious doctrine but insisted that the "beginning" of the universe in the *Timaeus* be taken literally.